

Invitation To Bid (ITB) for goods

For The Provision And Installation Of
Scientific Laboratory Equipment And
Material

ITB No. (15-IQOH-ITB-73)



Date: 4th November 2015

**Invitation To Bid (goods)
For The Provision And Installation Of Scientific Laboratory Equipment
And Material
ITB No. 15-IQOH-ITB-73**

Section 1: Bid data

Bid number:	ITB-15-IQOH-ITB-73
Project:	USAID Jordan School Expansion Project (JSEP)
Procurement official's name:	Hamzah KHAIR
Email:	hamzahk@unops.org
Telephone number:	+962 79 7555 997
Facsimile:	+962 (6) 593 1249
Issue date:	4 th November 2015

Requests for clarifications due

Date:	9 th November 2015
Time:	13:00 hrs Local Jordan Time

UNOPS clarifications to Bidders due

Date:	11 th November 2015
Time:	13:00 hrs Jordan Local Time

Bid due

BIDDERS ARE RESPONSIBLE FOR THE TIMELY SUBMISSION OF THEIR BID.

Bid due Date:	19 th November 2015
Time:	14:00 hrs Jordan Local Time

Planned award date

Date:	26 th November 2015
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Planned contract start date delivery date (on or before)

Date:	immediately after signing the contract
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For The Provision And Installation Of Scientific Laboratory Equipment And Material
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Section 2: ITB letter

UNOPS plans to procure **scientific laboratory equipment and material** as defined in accordance with these documents. UNOPS now invites sealed bids from qualified Bidders for providing the requirements as defined in the UNOPS specification attached hereto. Bids must be received by UNOPS by mail or email at the address specified not later than **14:00 hrs on 19.11.2015 Jordan time**

This ITB is conducted in accordance with the UNOPS Procurement Manual and all other relevant directives and issuances. These can be accessed by the link provided below. For clarification on specific issues, or to learn more details about procurement at UNOPS, Bidders are encouraged to consult the UNOPS Procurement Manual. In case of contradictions between this ITB and the UNOPS Procurement Manual, the UNOPS Procurement Manual shall prevail.

<http://www.unops.org/SiteCollectionDocuments/Procurement/UNOPS%20procurement%20manual%20EN.pdf>

This UNOPS ITB consists of six sections and a series of annexes which will be completed by Bidders and returned with their:

- ITB Section 1: Bid data sheet
- ITB Section 2: ITB letter (this document)
- ITB Section 3: Instructions to Bidders
- ITB Section 4: UNOPS technical specifications/statement of work
- ITB Section 5: UNOPS General Conditions of Contract (goods/services/small services)
- ITB Section 6: Special Conditions for Goods
- ITB Section 7: UNOPS sample contract for goods

Returnable ITB forms (mandatory): Annexes A - E must be sent as part of every ITB (goods)

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|---------|---|
| Annex A | Bid/No Bid Confirmation Form |
| Annex B | Check List Form |
| Annex C | Bid Submission, Technical and Price Schedule Offer Form |
| Annex D | UNGM Vendor registration form |
| Annex E | Performance security form (10% of total contract value) |


Interested Bidders may obtain further information by contacting this email address: hamzahk@unops.org

Pre-cleared by:



Nisreen Shunnar
Procurement and Contracts Specialist
UNOPS Regional Operational Hub in Amman

Approved by:



Philip Leighton
Operations Advisor
UNOPS Regional Operational Hub in Amman

Invitation To Bid (goods) For The Provision And Installation Of Scientific Laboratory Equipment And Material ITB No. 15-IQOH-ITB-73

Section 3: Instructions to Bidders

1. Introduction

UNOPS means the United Nations Office for Project Services, **Regional Operational Hub in Amman**, with offices located in more than 80 countries worldwide.

All communications regarding this ITB must be directed only to UNOPS through Hamzah Khair by email at hamzahk@unops.org. Bidders must not communicate with any other personnel of UNOPS regarding this ITB.

THE BIDDER ASSUMES FULL RESPONSIBILITY FOR THE TIMELY DELIVERY OF THE BID TO THE DESIGNATED LOCATION AT **DEIR GHBAR, AL-SHAKEREEN ST. P.O. BOX 941655 AMMAN 11194 JORDAN**. BIDS DELIVERED TO ANY OTHER OFFICE, LOCATION, OR EMAIL ADDRESS MAY BE REJECTED.

2. Eligibility and pre-qualification criteria

Bidders must not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by UNOPS to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods under this Invitation To Bid.

Bidders must not be under a declaration of ineligibility for corrupt and fraudulent practices published by UNOPS on its website. Bidders must meet the eligibility criteria as published on the [UNOPS website](#).

All suppliers are expected to embrace the principles of the [United Nations Supplier Code of Conduct](#), given that it originates from the core values of the Charter of the United Nations. UNOPS also expects all its suppliers to adhere to the principles of the [United Nations Global Compact](#).

When the Bidder is not the manufacturer of the goods, and if so required in the UNOPS technical specifications/statement of work (section 4 of this ITB) the Bidder shall be duly authorized by the manufacturer of the goods to submit this bid by completing annex J and returning it with its bid, assuring full guarantee and warranty obligations as per the contract.

The Bidder must have the required and relevant experience, financial, and production capability necessary to perform the contract, as specified in the UNOPS technical specifications/statement of work (section 4 of this ITB)

Bidders may be disqualified if they have made misleading or false representations in the forms, statements and attachments submitted as proof of the qualification requirements; and/or record of poor performance such as, not properly completing contracts, inordinate delays in completion, litigation history, financial failures etc.

3. Cost of bid

The Bidder shall bear all costs associated with the preparation and submission of its bid. UNOPS will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the solicitation process.

4. Content of solicitation documents

The goods required, bid procedures and contract terms are prescribed in these solicitation documents, contents of which are listed in Section 2, ITB Letter.

Bids must offer goods for the total requirement, unless otherwise permitted in the solicitation document. Bids offering only part of the goods may be rejected unless permitted otherwise in the solicitation document. The Bidder is expected to examine all corresponding instructions, forms, terms and specifications contained in the solicitation documents. Failure to furnish all information required by these documents or submission of a bid that does not comply with these documents will be at the Bidder's risk and may affect the evaluation of the bid.

5. Clarification of solicitation documents and pre-bid conference/site visit [if applicable]

- a. A prospective Bidder requiring any clarification of the solicitation documents may notify UNOPS in writing at UNOPS mailing address or email address indicated in the ITB. UNOPS will respond in writing to any request for clarification of the solicitation documents that it receives by the due date outlined on section 1. Written copies of UNOPS response (including an explanation of the query but without identifying the source of inquiry) will be sent to all prospective Bidders that have received the solicitation documents.

If the ITB has been advertised publicly, the results of any clarification exercise (including an explanation of the query but without identifying the source of inquiry) will be posted on the UNOPS website and UNGM.

6. Amendments of solicitation documents

At any time prior to the deadline for the submission of bids, UNOPS may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the solicitation documents by amendment.

All prospective Bidders that have received the solicitation documents will be notified in writing of all amendments to the solicitation documents. For open competitions, all amendments will be posted on the UNOPS website in the tender notice.

In order to afford prospective Bidders reasonable time in which to take the amendment into account in preparing their bids, UNOPS may, at its discretion, extend the deadline for the submission of bid. UNOPS may, at its discretion, cancel the requirement in part or in whole.

7. Language of Bids

The bids prepared by the Bidder and all correspondence and documents relating to the bid exchanged by the Bidder and UNOPS, shall be written in **English**. Supporting documents and printed literature furnished by the Bidder may be in another language, provided they are accompanied by an appropriate translation of all relevant passages in **English**. In any such case, for interpretation of the bid, the translation shall prevail. The sole responsibility for translation and the accuracy thereof, shall rest with the Bidder.

8. Documents comprising the bid

Bidders shall not submit more than one bid per Bidder in this ITB process, with the exception of alternative offers if so provided for in the ITB Section 4, UNOPS technical specifications/statement of work.

The bid prepared by the Bidder shall comprise the following components:

ITB Submission (on or before bid due date):

As a minimum, Bidders shall complete and return the documents listed below (annexes to this ITB) as an integral part of their bid. Bidders may add additional documentation to their bids as they deem appropriate.

Failure to complete and return the documents listed below as part of the bid, may result in bid rejection.

Part of bid	Check list form (Annex B hereto)
Part of bid	Signed Bid submission, technical and price schedule offer form (Annex C hereto)
Part of bid	UNGM Vendor registration form (Annex D hereto)
Part of bid	Performance security form (10% of total contract value) (Annex D hereto)

If after assessing this opportunity, you have made the determination not to submit your bid, we would appreciate if you could return this form indicating your reasons for non-participation.

Pre-submission:

Bidders are requested to complete and return the Bid/No Bid Confirmation Form prior to the submission deadline, indicating whether they do or do not intend to bid.

Stand-alone document	Bid/no bid confirmation form (Annex A hereto)
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9. Bid Prices

The Bidder shall indicate on the appropriate bid price sheet contained in these solicitation documents the prices of the goods it proposes to supply under the contract

The price of the goods shall be quoted as per Incoterms detailed in the Price Schedule Form.

Fixed Price: Prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract, and not subject to variation on any account. A bid submitted with an adjustable price quotation will be treated as non-responsive and rejected.

10. Bid Currencies

All prices shall be quoted in Jordanian Dinar (JOD)

UNOPS reserves the right not to reject any bids submitted in another currency than the mandatory bidding currency stated above. UNOPS may accept bids submitted in another currency than stated above, if the Bidder confirms during the clarification of bids (18) in writing that it will accept a contract issued in the mandatory bid currency, and that for conversion, the official United Nations operational rate of exchange of the day of the ITB deadline as stated in the ITB letter shall apply.

Regardless of the currency of bids received, the contract will always be issued and subsequent payments will be made in the mandatory bidding currency above.

11. Bid Security “DOES NOT APPLY TO THIS ITB”

~~As a requirement to participate in this solicitation, Bidders shall submit a bid security as part of the bid in the amount of _____ [insert symbol, figure and words]. Any bid security will be in the same currency as stipulated in clause 10 Bid currencies.~~

~~The bid security shall be in the form of a bid bond, a bank guarantee or irrevocable Letter of Credit issued by an accredited bank, acceptable to UNOPS, in the form provided in the solicitation documents, or another form acceptable to UNOPS and valid for thirty (30) days beyond the period of bid validity prescribed by UNOPS pursuant to clause 12, Period of Validity of Bids. Any unsecured bid may be rejected by UNOPS.~~

~~Unsuccessful Bidders' bid securities will be discharged/returned as promptly as possible but no later than thirty (30) days after the expiration of the period of bid validity prescribed by UNOPS pursuant to clause 12, Period of Validity of Bids.~~

~~The successful Bidder(s)' bid securities will be discharged/returned upon the Bidder executing the contract, pursuant to clause 25, Signing of Contract.~~

~~The bid security may be forfeited:~~

- ~~a. If a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the bid submission form; or~~
- ~~b. In the case of the successful Bidder, if the Bidder fails to sign the contract in accordance with clause 25, Signing of Contract.~~

12. Period of Validity of Bids

Bids shall remain valid for **hundred twenty days (120 days)** after the date of bid submission prescribed by UNOPS, pursuant to the deadline clause. A bid valid for a shorter period may be rejected.

In exceptional circumstances, UNOPS may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. Bid security provided shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid security.

13. Format and Signing of Bids

The bid shall be typed and shall be signed in indelible ink by the Bidder or a person or persons duly authorized to bind the Bidder to the contract. The latter authorization shall be indicated by written power-of-attorney accompanying the bid.

A bid shall contain no interlineations, erasures, or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be initialled by the person or persons signing the bid.

14. Sealing and Marking of Bids

The bidder may submit their bid by mail hard copy, which should have the subject line

UNOPS-IQOH-2015-IQOH- and in the email body be addressed as follows:
(Attention: Bid opening panel)

Sub-Regional Operational Hub in Amman
Deir Ghbar, Al-Shakereen St.
P.O. Box 941655 Amman- 11194 Jordan

If the envelope is not sealed and marked as per the instructions in this clause, UNOPS does not assume responsibility for the bid's misplacement or premature opening.

OR

- Any email should have the subject line **UNOPS-IQOH-2015-IQOH-** and in the email body be addressed as follows:

UNOPS- IQOH
Subregional Operational Hub in Amman
(Attention: Bid opening panel)
IQOCProcurementSecureMail@unops.org

In case of bid submission by email to UNOPS, the receipt time stamp shall be the date and time when the submission has been received in the dedicated UNOPS inbox. UNOPS is not responsible for any delays caused by network problems etc. It is the sole responsibility of Bidders to ensure that their bid is received by UNOPS in the dedicated inbox, on or before the prescribed tender deadline.

15. Deadline for Submission of Bids

Bids must be received by UNOPS at the email address/office address specified under clause 14 Sealing and Marking of Bids not later than 14 hrs, Jordan Local Time on 19 November 2015. All bids will be opened shortly thereafter.

UNOPS may, at its discretion, extend this deadline for the submission of bids by amending the solicitation documents in accordance with clause Amendment of solicitation documents. In this case, all rights and obligations of UNOPS and Bidders previously subject to the deadline, will thereafter be subject to the new deadline as extended.

16. Late Bid

Any bids received by UNOPS after the deadline for the submission of bids prescribed by UNOPS, pursuant to clause "Deadline for submission of bids", will be rejected. Where a bid security was requested, any such bid security will be returned to the Bidder after the contract award has been made.

17. Modification and Withdrawal of Bids

The Bidder may withdraw their bid after the bid's submission, provided that written notice of the withdrawal is received by UNOPS prior to the deadline prescribed for the submission of bids.

The Bidder's withdrawal notice shall be prepared, sealed, marked, and dispatched in accordance with the provisions of the clause 'Deadline for submission of bids'. No bid may be modified subsequent to the deadline for submission of bids. No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity.

18. Clarification of Bids

To assist in the examination, evaluation and comparison of bids, UNOPS may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing, and no change in the price or substance of the bid shall be sought, offered or permitted. UNOPS will review minor informalities, errors, clerical mistakes, apparent errors in price and missing documents, in accordance with the [UNOPS Procurement Manual 8.9 Discussions with vendors](#).

19. Preliminary Screening

UNOPS will examine the bids to determine whether they are complete, the required sureties have been furnished, the documents have been properly signed, the bids are generally in order, and there are no computational errors in the Price Schedule.

UNOPS will examine whether bidders have been in continuous business of providing similar storage and distribution services during the last 3 years. It must be supported by a list of at least three (3) customer references for which similar service is currently provided by bidder.

20. Determination of Compliance

Compliance refers to whether or not the bid substantially meets the quantitatively and qualitatively defined criteria, as per the requirements and other qualification criteria as stated in the solicitation documents. If the offer complies with all the criteria specified in the solicitation documents, such as pre-qualification and eligibility requirements, the offer is deemed substantially compliant.

21. Evaluation steps

All bids found substantially compliant with the formal criteria under 1.19 Preliminary Screening, will go through subsequent evaluation as follows:

- a. Pre-qualification and eligibility criteria as outlined in the UNOPS technical specifications/statement of work as contained in this ITB, are evaluated prior to technical and financial evaluation. Only bids meeting the minimum pre-qualification and eligibility criteria, will be evaluated further.
- b. Technical evaluation will be conducted to establish substantial compliance. When the specifications of the item/s quoted vary in one or more significant aspect/s from the minimum required technical specifications, the bid will not be considered substantially compliant and will not be evaluated further.
- c. The prices of bids found to be substantially compliant, will be compared to identify the most substantially compliant bid which represents the lowest overall costs to UNOPS.
- d. Sample of product materials, when required, must be furnished, free of expense. Upon bidder's request, it will be returned at the bidder's expense. Request for the return of samples must be made within 10 calendar days following date of bid opening. Otherwise the samples will become UNOPS property. Each individual sample must be labelled with the bidder's name, bid number, and item number. A sample on which an award is made, will be retained, and will be checked against the delivered materials, until the contract is completed, and then returned, if requested, as specified

above. Brochures and catalogues of the offered items in respond to this ITB must be furnished with the offer.

- e. Bidder should provide full and detailed explanations on how the bidder will organize himself for the work, including responsible contract person(s) for the day to day coordination and cooperation in executing any contract the maybe awarded as a result of this ITB.
- f. Bidder is highly encouraged to provide a copy of product and / or process quality certificates in support to any claims of ISO or other quality assurance certifications.

22. Award Criteria

Bidders must meet all the mandatory business criteria outlined in Annex C UNOPS technical specifications. The qualifications will be evaluated by UNOPS, and Bidders determined to have met all mandatory requirements, will be considered for award.

UNOPS will award the contract to the responsible contractor whose bid substantially conforms to the requirements set forth in the solicitation documents, and offers the lowest overall cost to UNOPS. UNOPS reserves the right to conduct negotiations with the vendor regarding the contents of their offer. UNOPS reserves the right to accept or reject any bid, and to annul the solicitation process and reject all bids at any time prior to the award of contract, without thereby incurring any liability to the affected Bidder or Bidders, or any obligation to inform the affected Bidder or Bidders of the grounds for UNOPS action.

23. UNOPS right to vary quantities at time of Award

At the time the contract is awarded, UNOPS reserves the right to increase or decrease the quantity of goods and related services originally specified in Section 4 by 30%, Technical specifications/SOW, provided this does not exceed the percentages specified in Section 4, Technical specifications/SOW, and without any change in the unit prices or other terms and conditions of the bid and the bidding documents.

24. Notification of Award

Prior to the expiration of the period of bid validity, UNOPS will notify the successful Bidder in writing by email or post, that its bid has been accepted. The notifications of award will constitute the formation of the contract. Please note that the Bidder, if not already a registered vendor, will be required to complete a vendor registration process on the UNGM prior to the signature and finalization of the contract, if not registered already.

25. Signing of Contract

At the same time as UNOPS notifies a successful Bidder that its bid has been accepted, UNOPS will invite the Bidder, provided the Bidder is successfully registered on the UNGM, to sign the final version of the Contract Form provided in the solicitation documents, incorporating all agreements between the parties.

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Section 4: UNOPS technical specifications

A. Summary of requirements

Lot 1. List of goods and delivery schedule (Physics)				
Line item/ lot N°	Description of goods	Quantity	Unit	Delivery schedule from date of contract
1.1	Air track	26	EA	Up to 45 days
1.2	Ammeter (AC)	92	EA	Up to 45 days
1.3	Ball and ring	39	EA	Up to 45 days
1.4	bar magnet	92	EA	Up to 45 days
1.5	Bernoulli tube	39	EA	Up to 45 days
1.6	Boyle's law apparatus	39	EA	Up to 45 days
1.7	Bucket and cylinder	65	EA	Up to 45 days
1.8	Calorimeter	119	EA	Up to 45 days
1.9	Capacitance Substitution Board	65	EA	Up to 45 days
1.10	Circular Coil	146	EA	Up to 45 days
1.11	Clinical thermometer	119	EA	Up to 45 days
1.12	compound strip	65	EA	Up to 45 days
1.13	Conical Conductor	146	EA	Up to 45 days
1.14	Cubes for density investigation	119	EA	Up to 45 days
1.15	Demonstration Dynamo	119	EA	Up to 45 days
1.16	demonstration spring	92	EA	Up to 45 days
1.17	Digital Low voltage power supply	79	EA	Up to 45 days
1.18	digital multi meter	53	EA	Up to 45 days
1.19	Digital Stop Watch	200	EA	Up to 45 days
1.20	Discharger	92	EA	Up to 45 days
1.21	Displacement vessel	146	EA	Up to 45 days
1.22	Ebonite rod	145	EA	Up to 45 days
1.23	electric fan	79	EA	Up to 45 days
1.24	Electroscope	92	EA	Up to 45 days
1.25	Electroscope needle	65	EA	Up to 45 days
1.26	galvanometer	92	EA	Up to 45 days
1.27	Hook's law	65	EA	Up to 45 days
1.28	Hope's apparatus	39	EA	Up to 45 days
1.29	horse shoe magnet	119	EA	Up to 45 days
1.30	Inclined plane	92	EA	Up to 45 days
1.31	Inducting current coil	52	EA	Up to 45 days
1.32	Joule's calorimeter	119	EA	Up to 45 days
1.33	Large Compass	66	EA	Up to 45 days
1.34	latent heat of steam apparatus	39	EA	Up to 45 days
1.35	leads Set (banana)	400	EA	Up to 45 days
1.36	leads Set (crocodile)	400	EA	Up to 45 days
1.37	lens holder	400	EA	Up to 45 days
1.38	Leslie Cube	119	EA	Up to 45 days
1.39	Lever stick	172	EA	Up to 45 days

1.40	Light box and optical set	65	EA	Up to 45 days
1.41	Linear expansion apparatus	65	EA	Up to 45 days
1.42	loud speaker	120	EA	Up to 45 days
1.43	Mechanical Cart	65	EA	Up to 45 days
1.44	Meld's apparatus	52	EA	Up to 45 days
1.45	Meter	280	EA	Up to 45 days
1.46	Meter Bridge	65	EA	Up to 45 days
1.47	Micrometer	119	EA	Up to 45 days
1.48	Narrow prism	65	EA	Up to 45 days
1.49	Optical bench	26	EA	Up to 45 days
1.50	Optical lenses	400	EA	Up to 45 days
1.51	pair of Rods	145	EA	Up to 45 days
1.52	Parallel plate condenser	65	EA	Up to 45 days
1.53	Pascal's law set	39	EA	Up to 45 days
1.54	Perspex Blocks	92	EA	Up to 45 days
1.55	Photoelectric effect apparatus	65	EA	Up to 45 days
1.56	Plain mirror	400	EA	Up to 45 days
1.57	Proof plane	91	EA	Up to 45 days
1.58	Pulley system	118	EA	Up to 45 days
1.59	Resistance box	65	EA	Up to 45 days
1.60	Rheostat	92	EA	Up to 45 days
1.61	ripple tank	26	EA	Up to 45 days
1.62	Set of Demountable transformer	65	EA	Up to 45 days
1.63	set of prisms	65	EA	Up to 45 days
1.64	set of tuning fork	94	EA	Up to 45 days
1.65	set of tuning fork on resonance boxes	94	EA	Up to 45 days
1.66	Single pulley	145	EA	Up to 45 days
1.67	Small compass	145	EA	Up to 45 days
1.68	Solenoid coil	119	EA	Up to 45 days
1.69	Spherical conductor	91	EA	Up to 45 days
1.70	Spherical mirror	200	EA	Up to 45 days
1.71	Spring balance	65	EA	Up to 45 days
1.72	Standard resistance units	118	EA	Up to 45 days
1.73	Stroboscope	39	EA	Up to 45 days
1.74	Thermometer (alcohol C °)	119	EA	Up to 45 days
1.75	Thermometer (alcohol F °)	119	EA	Up to 45 days
1.76	Thermometer (Mercury C °)	119	EA	Up to 45 days
1.77	Thermopile	65	EA	Up to 45 days
1.78	ticker tabe timer	52	EA	Up to 45 days
1.79	Triangular Stand	280	EA	Up to 45 days
1.80	Triple beam balance	52	EA	Up to 45 days
1.81	U-shape magnet	119	EA	Up to 45 days
1.82	VAN DE GRAFF GENERATOR	26	EA	Up to 45 days
1.83	Vernier calipers	119	EA	Up to 45 days
1.84	Voltmeter (DC)	92	EA	Up to 45 days
1.85	weights	120	EA	Up to 45 days
1.86	Young's Modulus Apparatus	39	EA	Up to 45 days

Lot 2. List of goods and delivery schedule (Chemistry)				
Line item/ lot N°	Description of goods	Quantity	Unit	Delivery schedule from date of contract
2.1	Acetic Acid	43	EA	Up to 45 days
2.2	Aluminum Metal	43	EA	Up to 45 days
2.3	Amber color glass Reagent Bottles 125ml	172	EA	Up to 45 days
2.4	Amber color glass Reagent Bottles 250ml	258	EA	Up to 45 days
2.5	Amber Dropping bottle	215	EA	Up to 45 days
2.6	Ammonium Chloride	43	EA	Up to 45 days
2.7	Ammonium dichromate	43	EA	Up to 45 days
2.8	Ammonium hydroxide	43	EA	Up to 45 days
2.9	Ammonium Nitrate	43	EA	Up to 45 days
2.10	Atomic set Model	172	EA	Up to 45 days
2.11	Barium Chloride Dihydrate	43	EA	Up to 45 days
2.12	Beaker 1000ml	172	EA	Up to 45 days
2.13	Beaker 100ml	430	EA	Up to 45 days
2.14	Beaker 10ml	172	EA	Up to 45 days
2.15	Beaker 250ml	258	EA	Up to 45 days
2.16	Beaker 25ml	258	EA	Up to 45 days
2.17	Beaker 500ml	258	EA	Up to 45 days
2.18	Beaker 50ml	258	EA	Up to 45 days
2.19	Beehive shelves	129	EA	Up to 45 days
2.20	Blue Litmus Papers	43	EA	Up to 45 days
2.21	Boiling flask (Round bottom) 500ml	86	EA	Up to 45 days
2.22	Bunsen burner	258	EA	Up to 45 days
2.23	Burette	172	EA	Up to 45 days
2.24	Calcium Chloride Anhydrous	43	EA	Up to 45 days
2.25	Calcium Hydrogen Carbonate	43	EA	Up to 45 days
2.26	Calcium Hydroxide	43	EA	Up to 45 days
2.27	Calcium Metal	43	EA	Up to 45 days
2.28	Calcium Oxide	43	EA	Up to 45 days
2.29	Clear Dropping bottle	215	EA	Up to 45 days
2.30	Clear glass Reagent Bottles 125ml	172	EA	Up to 45 days
2.31	Clear glass Reagent Bottles 250ml	258	EA	Up to 45 days
2.32	Clear Safety Goggles	215	EA	Up to 45 days
2.33	Cobalt (II) Chloride Hexahydrate	43	EA	Up to 45 days
2.34	Copper	43	EA	Up to 45 days
2.35	Copper (II) Nitrate Tri hydrate	43	EA	Up to 45 days
2.36	Copper (II) Sulphate Anhydrous	43	EA	Up to 45 days
2.37	Copper (II) Sulphate Pentahydrate	43	EA	Up to 45 days
2.38	Copper Oxide	43	EA	Up to 45 days
2.39	Cork Borers brass	129	EA	Up to 45 days
2.40	Crucible tongs	86	EA	Up to 45 days
2.41	Crucibles 50ml	258	EA	Up to 45 days
2.42	Desicator	43	EA	Up to 45 days
2.43	Disposable Gloves	86	EA	Up to 45 days
2.44	Disposable graduated pipettes	215	EA	Up to 45 days
2.45	Disposable Mask	129	EA	Up to 45 days
2.46	Distillation head	86	EA	Up to 45 days
2.47	Electronic Balance	43	EA	Up to 45 days
2.48	Erlenmeyer(Conical flask)100ml	258	EA	Up to 45 days
2.49	Erlenmeyer(Conical flask)250ml	258	EA	Up to 45 days
2.50	Erlenmeyer(Conical flask)500ml	172	EA	Up to 45 days
2.51	Erlenmeyer(Conical flask)50ml	172	EA	Up to 45 days

2.52	Evaporation basin 50ml	258	EA	Up to 45 days
2.53	Filter funnels	172	EA	Up to 45 days
2.54	Filter Paper	86	EA	Up to 45 days
2.55	Filtering flask 250ml	172	EA	Up to 45 days
2.56	Filtering flask 500ml	172	EA	Up to 45 days
2.57	Fire Blanket	86	EA	Up to 45 days
2.58	Flask Brush	172	EA	Up to 45 days
2.59	Fractional column	86	EA	Up to 45 days
2.60	Funnel stand	129	EA	Up to 45 days
2.61	Gas Jars	129	EA	Up to 45 days
2.62	Graduated Measuring Cylinders 100ml	215	EA	Up to 45 days
2.63	Graduated Measuring Cylinders 250ml	215	EA	Up to 45 days
2.64	Graduated Measuring Cylinders 50ml	215	EA	Up to 45 days
2.65	Graduated pipettes 10ml	129	EA	Up to 45 days
2.66	Graduated pipettes 25ml	129	EA	Up to 45 days
2.67	Hoffman voltmeter	43	EA	Up to 45 days
2.68	Hot plate with magnetic stirrer	86	EA	Up to 45 days
2.69	Hydrochloric Acid	43	EA	Up to 45 days
2.70	Iodine	43	EA	Up to 45 days
2.71	Iron (III) Chloride	43	EA	Up to 45 days
2.72	Iron (III) Nitrate Nano- hydrate	43	EA	Up to 45 days
2.73	Iron (III) Oxide	43	EA	Up to 45 days
2.74	Iron filling	43	EA	Up to 45 days
2.75	Iron Wire Gauge (Gause)	86	EA	Up to 45 days
2.76	Lead (II) Nitrate	43	EA	Up to 45 days
2.77	Leibig Condenser	86	EA	Up to 45 days
2.78	Magnesium Chloride	43	EA	Up to 45 days
2.79	Magnesium Oxide	43	EA	Up to 45 days
2.80	Magnesium Ribbon	43	EA	Up to 45 days
2.81	Magnesium Sulphate	43	EA	Up to 45 days
2.82	Magnesium Turnings	43	EA	Up to 45 days
2.83	Magnetic rotors	86	EA	Up to 45 days
2.84	Magnetic rotors rod	86	EA	Up to 45 days
2.85	Mohr Clip	258	EA	Up to 45 days
2.86	Mortar & Pestle	129	EA	Up to 45 days
2.87	Naphthalene	43	EA	Up to 45 days
2.88	Nitric Acid	43	EA	Up to 45 days
2.89	Pair of Carbon electrodes	258	EA	Up to 45 days
2.90	Periodic Table Chart	43	EA	Up to 45 days
2.91	pH and temperature meter	129	EA	Up to 45 days
2.92	Pipette Bulb 10ml	129	EA	Up to 45 days
2.93	Pipette Bulb 1ml	129	EA	Up to 45 days
2.94	Pipette Bulb 2ml	129	EA	Up to 45 days
2.95	Pipette Bulb 5ml	129	EA	Up to 45 days
2.96	Pipette Filler (Pi-Pump)	172	EA	Up to 45 days
2.97	Plates for Electrolysis	129	EA	Up to 45 days
2.98	Pneumatic Trough	172	EA	Up to 45 days
2.99	Pneumatic trough	86	EA	Up to 45 days
2.100	Potassium Aluminum Sulphate	43	EA	Up to 45 days
2.101	Potassium Bromide	43	EA	Up to 45 days
2.102	Potassium Carbonate Anhydrous	43	EA	Up to 45 days
2.103	Potassium chromate	43	EA	Up to 45 days
2.104	Potassium Dichromate	43	EA	Up to 45 days
2.105	Potassium Hydroxide	43	EA	Up to 45 days
2.106	Potassium Iodide	43	EA	Up to 45 days
2.107	Potassium Nitrate	43	EA	Up to 45 days

2.108	Potassium Permanganate	43	EA	Up to 45 days
2.109	Potassium Sulfate	43	EA	Up to 45 days
2.110	PVC tubes OD=9mm	86	EA	Up to 45 days
2.111	Receive adapter	86	EA	Up to 45 days
2.112	Red Litmus Papers	43	EA	Up to 45 days
2.113	Retort stand	258	EA	Up to 45 days
2.114	Rubber Gloves	129	EA	Up to 45 days
2.115	Rubber Tubes OD=12.5mm	86	EA	Up to 45 days
2.116	Rubber Tubes OD=6mm	86	EA	Up to 45 days
2.117	Safety Thistle funnel	86	EA	Up to 45 days
2.118	Salt bridge	129	EA	Up to 45 days
2.119	Separating funnel	86	EA	Up to 45 days
2.120	Silver Nitrate	43	EA	Up to 45 days
2.121	Sodium Acetate	43	EA	Up to 45 days
2.122	Sodium Carbonate	43	EA	Up to 45 days
2.123	Sodium carbonate monohydrate	43	EA	Up to 45 days
2.124	Sodium Hydrogen Carbonate	43	EA	Up to 45 days
2.125	Sodium Hydroxide	43	EA	Up to 45 days
2.126	Sodium Sulfate	43	EA	Up to 45 days
2.127	Spectrum Tube Stand With Power Supply	43	EA	Up to 45 days
2.128	Spectrum Tubes	43	EA	Up to 45 days
2.129	Stainless steel spatula	215	EA	Up to 45 days
2.130	Stirring Rod	86	EA	Up to 45 days
2.131	Stoppers	43	EA	Up to 45 days
2.132	Sulphur	43	EA	Up to 45 days
2.133	Sulphuric acid	43	EA	Up to 45 days
2.134	Test Tube Brush	172	EA	Up to 45 days
2.135	Test Tube Holder	258	EA	Up to 45 days
2.136	Test Tube Stand	258	EA	Up to 45 days
2.137	Test Tubes	86	EA	Up to 45 days
2.138	Triangle	86	EA	Up to 45 days
2.139	Triangular stand	258	EA	Up to 45 days
2.140	Tubing connector T shape	129	EA	Up to 45 days
2.141	Tubing connector Y shape	129	EA	Up to 45 days
2.142	Universal Indicator Paper	43	EA	Up to 45 days
2.143	Vertical Pipette stand	86	EA	Up to 45 days
2.144	Volumetric flask 100ml	258	EA	Up to 45 days
2.145	Volumetric flask 250ml	258	EA	Up to 45 days
2.146	Volumetric flask 500ml	172	EA	Up to 45 days
2.147	Volumetric flask 50ml	172	EA	Up to 45 days
2.148	Washing bottles 250ml	86	EA	Up to 45 days
2.149	Washing bottles 500ml	86	EA	Up to 45 days
2.150	Water Still	43	EA	Up to 45 days
2.151	Zinc Metal	43	EA	Up to 45 days
2.152	Zinc Nitrate Hexahydrate	43	EA	Up to 45 days
2.153	Zinc Oxide	43	EA	Up to 45 days

Lot.3 List of goods and delivery schedule (Biology)				
Line item/ lot N□	Description of goods	Quantity	Unit	Delivery schedule from date of contract
3.1	Aceto carmine.(100ml)	13	EA	Up to 45 days
3.2	Aceto Orcein, (100ml)	13	EA	Up to 45 days
3.3	Acetone, (99.8%). (500) ml (99.8%).	13	EA	Up to 45 days
3.4	Benedict's Solution. (1000) ml	13	EA	Up to 45 days
3.5	Binocular Compound Microscope	160	EA	Up to 45 days
3.6	Bromothymol Blue, (10) gm	13	EA	Up to 45 days
3.7	Canada Balsam)25(ml (D:0.99)	13	EA	Up to 45 days
3.8	Carious Tooth MODEL	13	EA	Up to 45 days
3.9	Centrifuge	13	EA	Up to 45 days
3.10	Crystal violet. (25 ml), (D: 0.808)	13	EA	Up to 45 days
3.11	D N A Model	13	EA	Up to 45 days
3.12	Digital Microscope	13	EA	Up to 45 days
3.13	Dissecting SET	26	EA	Up to 45 days
3.14	Dissecting DISH	26	EA	Up to 45 days
3.15	Eosin stain, bottle. (100) gm	13	EA	Up to 45 days
3.16	Fructose (100) gm	13	EA	Up to 45 days
3.17	Giemsa stain (10 ml)	13	EA	Up to 45 days
3.18	Glucose, powder. (500(gm	13	EA	Up to 45 days
3.19	Grams Iodine. (100ml)	13	EA	Up to 45 days
3.20	Human Brain Model	13	EA	Up to 45 days
3.21	Human Ear Model	40	EA	Up to 45 days
3.22	Human Eye Model	13	EA	Up to 45 days
3.23	Human Heart Model	40	EA	Up to 45 days
3.24	Human Kidney Model	40	EA	Up to 45 days
3.25	Human Skeleton Model	13	EA	Up to 45 days
3.26	Human Torso Model	40	EA	Up to 45 days
3.27	Incubator	13	EA	Up to 45 days
3.28	Indophenol (100) gm	13	EA	Up to 45 days
3.29	Insect net	39	EA	Up to 45 days
3.30	Iodine. (100 gm)	13	EA	Up to 45 days
3.31	Leaf , Transverse section Model	40	EA	Up to 45 days
3.32	Lugol's solution, (100) ml (D: 1.007)	13	EA	Up to 45 days
3.33	Methyl cellulose. (50 gm)	40	EA	Up to 45 days
3.34	Methyl Orange. (25) gm	13	EA	Up to 45 days
3.35	Methylen Blue stain, (Dry.)5(gm	13	EA	Up to 45 days
3.36	Microscope Slide BOX	13	EA	Up to 45 days
3.37	Microscope Slides	26	EA	Up to 45 days
3.38	Mono cotolydone Root MODEL	40	EA	Up to 45 days
3.39	Monocotyledon Stem Model	40	EA	Up to 45 days
3.40	Nutrient Agar Powder. (1000 gm)	13	EA	Up to 45 days
3.41	Pepsin. (5) gm	13	EA	Up to 45 days
3.42	Petri Dishes	13	EA	Up to 45 days
3.43	Phenolphthalein. 100 gm	40	EA	Up to 45 days
3.44	Prepared Slides For Microscope	40	EA	Up to 45 days
3.45	Prepared Slides For projector	40	EA	Up to 45 days
3.46	Ringer's solution.(1 liter)	13	EA	Up to 45 days
3.47	Safranin stain, bottle (100) gm	13	EA	Up to 45 days
3.48	Section of Dicotyledon Root Model	40	EA	Up to 45 days
3.49	Section of Dicotyledon Stem Model	40	EA	Up to 45 days
3.50	Slide cover (COVER GLASSES)	52	EA	Up to 45 days
3.51	Slide Projector	40	EA	Up to 45 days
3.52	Sphygmomanometer	13	EA	Up to 45 days

3.53	Stereo Microscope (binocular)	120	EA	Up to 45 days
3.54	Stethoscope	13	EA	Up to 45 days
3.55	Sucrose. (250)gm	13	EA	Up to 45 days
3.56	Wright's Blood stain, bottle .(50 gm)	13	EA	Up to 45 days

Lot 4. List of goods and delivery schedule (Geology)				
Line item/ lot N°	Description of goods	Quantity	Unit	Delivery schedule from date of contract
4.1	Basic rock collection	43	EA	Up to 45 days
4.2	A mineral set of Hardness	43	EA	Up to 45 days
4.3	A mineral set for color & Streak	43	EA	Up to 45 days
4.4	A mineral set for cleavage	43	EA	Up to 45 days
4.5	A mineral set for Specific Gravity and Luster	43	EA	Up to 45 days
4.6	A set Of Igneous rock texture	43	EA	Up to 45 days
4.7	Jordanian industry Rocks and ore minerals	43	EA	Up to 45 days
4.8	A set of Igneous Rock	43	EA	Up to 45 days
4.9	A Set of clastic Sedimentary Rocks	43	EA	Up to 45 days
4.10	A Set of Chemical Biochemical Sedimentary Rocks	43	EA	Up to 45 days
4.11	A Set of Metamorphic Rocks	43	EA	Up to 45 days
4.12	Fossil for Record life	43	EA	Up to 45 days
4.13	Field Magnifier	43	EA	Up to 45 days
4.14	Model of earth Internal structure	43	EA	Up to 45 days
4.15	Basic Celestial Globe Model	43	EA	Up to 45 days
4.16	THE ORBITER	43	EA	Up to 45 days
4.17	Oceanographic Model	43	EA	Up to 45 days
4.18	Fault Fractures Model Set	43	EA	Up to 45 days
4.19	Fold Model Set	43	EA	Up to 45 days
4.20	Plate tectonic model	43	EA	Up to 45 days
4.21	geological map of Jordan	43	EA	Up to 45 days
4.22	Geologic time scale	43	EA	Up to 45 days
4.23	Satellite image of Jordan	43	EA	Up to 45 days
4.24	Stereoscope	43	EA	Up to 45 days
4.25	Crystal Models	43	EA	Up to 45 days
4.26	Atmosphere Chart	43	EA	Up to 45 days
4.27	Under ground water Model	43	EA	Up to 45 days
4.28	Geological compass With belt case	43	EA	Up to 45 days
4.29	Tectonic Map	43	EA	Up to 45 days

- The above quantities in tables 1, 2, 3 and 4 are indicative and subject to increase/ decrease based on the MOE (Ministry of Education) confirmed quantities for each school.
- The quantities of the above goods will be order based on the completion and readiness of the school premises.
- Bidders are encouraged to bid for all items, however partial bids will be accepted.
- UNOPS may split the award between one or more bidders to meet the delivery schedule
- The Bidder shall be liable for sorting, mending, baling or reconditioning of Goods and/or packages containing the Goods and gathering of loose contents of packages resulting from unpacking of procured furniture and goods and liable for keeping schools' premises clean from any unpacking and installation's work waste.

Consignee address and consignee-wise quantity distribution

Line item/ lot N°	Consignee address	Quantity	Unit
Items 1.1 to 4.29	43 Schools across Jordan (Ramtha, Irbid, Mafraq, AlBalqa, Amman, Madaba, Karak, Ma'an). Exact addresses to TBD with the contractor subject to award	Quantities per each school will be communicated upon award	EA

B. Detailed technical specifications

1. List of Physics Lab Material and Equipment

Item No:	<u>1.1</u>	Item Name:	<u>AIR TRACK APPARATUS</u>
Component & Specification			
Working Length	Air track of (200) cm approx., with clear graduation.		
Material	Good aluminum or equivalent , anti-rust		
Components	Blower, (1500) watt approx. working voltages (240) V, (50) Hz with continuously variable speed controller. On/Off switch Two large gliders(20cm long, 300-400 gm mass) approx. Two small gliders with half of the large gliders mass. Lobe bumpers. Three springs or more suitable for harmonic motion. Self-adhesive buffers Plastic holder for inelastic collision Five adjustable feet or more Kits and instruction book let Any other accessories will be considered		
TIMER SCALER AND FREQUENCY COUNTER			
Working on	220-240 V AC/ 50Hz, On-Off		
sockets	For two photo gates		
Timing modes	Three modes: for normal, memory, and period		
Range	Digital range (0-1000) seconds , in four digits or more		
Completed With	Two Photo gates, 1 meter or more long cables, can be mounted on a stand		
NOTE	All parts mentioned above should be from one origin, one company, the same factory, working together as one piece.		

Item No:	<u>1.2</u>	Item Name:	<u>Ammeter (AC)</u>
Component & Specification			
Ranges	(50) mA,(500) mA, (5) A		
Scale length	Not less than (80) mm		
Subdivision	About (2 %) of full scale		

Item No: <u>1.3</u>	Item Name: <u>Ball and ring</u>
Component & Specification	
Parts	<i>Captive brass ball.</i>
	<i>Brass ring.</i>
Material	<i>Brass.</i>
Ball Dia.	<i>Min. (20)mm.</i>
Complete with	<i>Chain.</i>
	<i>Heat insulated handle.</i>

Item No: <u>1.4</u>	Item Name: <u>Bar magnet</u>
Component & Specification	
No. Of Magnets	<i>Pair of magnets</i>
Dimensions	<i>(80×20×10) mm Approx.</i>
Material	<i>Alnico, and two different colors</i>
Case	<i>Plastic or wooden.</i>

Item No: <u>1.5</u>	Item Name: <u>Bernoulli tube</u>
Component & Specification	
Material	<i>Glass</i>
Tube Long	<i>(30) cm or more.</i>
Diameter	<i>About (2) cm at the wide ends, and narrow (1) cm in the middle.</i>
Accessories	<i>Three legs manometer with rubber connections</i>

Item No: <u>1.6</u>	Item Name: <u>Boyle's law apparatus</u>
Component & Specification	
Shape	<i>(J) Shape glass tube.</i>
Stand	<i>Suitable.</i>
	<i>Scale fitted to the stand.</i>
	<i>Graduated from (0) to (100) cm. approx.</i>
	<i>With mm divisions</i>
The Short Limb	<i>Closed</i>
	<i>length about (40) cm.</i>
The Long Limb	<i>Open.</i>
	<i>length about (78) cm.</i>
	<i>Its bore is about (8) mm dia. approx.</i>
Accessories	<i>(500) gm Putting any high density oil or alcohol.</i>

<u>Item No:</u> <u>1.7</u>		<u>Item Name:</u> <u>Bucket and cylinder</u>	
Component & Specification			
Bucket		<i>It has suspension loop at the top.</i>	
		<i>And it has a hook at the bottom.</i>	
Cylinder		<i>Has a hook at one end.</i>	
Cylinder size	Depth	<i>(60)mm approx.</i>	
	dia.	<i>(1.2) cm approx.</i>	
	Overall length	<i>(115) mm. Approx.</i>	
Purpose		<i>Archimedes principle</i>	

<u>Item No:</u>	<u>1.8</u>	<u>Item Name:</u>	<u>Calorimeter</u>
Component & Specification			
Material	Copper.		
Dimension	One inner vessel (75 × 50) mm diameter carried on cork or rubber supports.		
	One outer vessel (100 × 75) mm diameter.		
Shape	One lid for outer vessel with central tubule for thermometer & slit for stirrer.		
Complete with	One stirrer.		

<u>Item No:</u>	<u>1.9</u>	<u>Item Name:</u>	<u>Capacitance Substitution Board</u>
Component & Specification			
Maximum Working Voltage	(100) V or more.		
Installation	Independently on insulating board.		
Socket	(4) mm socket with working values.		
Values	Set ≥9		
		(220), (470) pF .	
	<u>Capacitors</u>	(100), (2.2), (4.7), (10), (22), (47) nF	
		(1)μF	

<i>Item No:</i> <u>1.10</u>		<i>Item Name:</i> <u>Circular Coil</u>	
<i>Component & Specification</i>			
<i>No. Of Turns</i>		<i>(70) or more.</i>	
<i>Turns Material.</i>		<i>Copper.</i>	

Coil Dia.	<i>from (15-20) cm.</i>
Base	<i>Isolated two plates, one as a base second as a sheet passing through the center of the coil</i>
Wire Dia.	<i>(0.5)mm approx.</i>
Sockets	<i>Pair of (4)mm.</i>
Input	<i>Up to 12 volts</i>

Item No: <u>1.11</u>	Item Name: <u>Clinical thermometer</u>
Component & Specification	
Type	<i>Mercury in clear glass.</i>
Rang	<i>From (+35) to (+43) C°.</i>
Subdivision	<i>(0.1) C°.</i>
Length	<i>About (120) mm.</i>

Item No: <u>1.12</u>	Item Name: <u>Compound strip</u>
Component & Specification	
Materials	<i>Bimetallic strips.</i>
Dimensions	<i>(150 × 20) mm approx.</i>
Handle	<i>Wooden.</i>

Item No: <u>1.13</u>	Item Name: <u>Conical Conductor</u>
Component & Specification	
Shape	<i>Hollow cone.</i>
Material	<i>Nickel plated brass, or Aluminium.</i>
Dimensions	<i>(10)cm</i>
Base	<i>Insulating stable durable.</i>
Rod	<i>Insulating.</i>

Item No: <u>1.14</u>	Item Name: <u>Cubes for density investigation</u>
Component & Specification	
Number	<i>(3) pc./set</i>
material	<i>Copper – Aluminum - wood</i>
dimensions	<i>(20×20×20)mm approx.</i>

Item No: 1.15 **Item Name:** **Demonstration Dynamo**

Component & Specification

Operating	Hand operated.
Base	Plastic.
Output	(DC) and (AC).
Coils	Circular or rectangular.
Indicator	Two light emitting diode.
Dimensions	(25×18×10) cm approx.
Magnets	Strong and removable.
Another Use	As a motor operating on (4-8) volt, power supply.
Sockets	Pair of (4)mm.

Item No: 1.16 **Item Name:** **Demonstration springs**

Component & Specification

Slinky Spring	Material	Antirust steel.
	Diameter	(5) mm pprox.
	Length	(10) cm when closed (800) cm or more when extended.
Snaky Spring	Material	Antirust steel.
	Diameter	(20) mm approx.
	Length	(180) cm when not stretched (800) cm or more when stretched

Item No: 1.17 **Item Name:** **Digital Low voltage power supply**

Component & Specification

Output	Variable from (0-20) volts approx. DC and AC.
Maximum Current	(3)A approx.
Input	(220-240) volts AC, (50) Hz.
Protection	Fuse protection; with (5) spare fuses.
Meter	Digital built-in meters one for voltage and current.
Sockets	Two pairs one for AC and the second for DC deferent in color.
Cord	(2) Meter long with British standard (3) pen square sockets.

Item No: 1.18

Item Name:

Digital multi meter
Component & Specification
Measuring Ranges

AC current ranges	Up to (10) A
DC current ranges	2 mA-10 A +1%+1
DC voltage ranges	2 V-1000V +0.5%+2
AC voltage range	2 V-750 V+1.2%+10
Resistance measurement	200 Ω -2000K OHMS+0.8%+2
MAX DISPLAY	1999
RANGE	MANUAL
TRANSISTOR TEST	YES STANDERD

Complete

Test leads
Battery
Fuse protection
Carrying case
Data hold
Auto power off

Item No: 1.19

Item Name:

Digital Stop Watch
Component & Specification

Type	Digital.
Material	Good material. Water proof. (50) mm dia. approx.
Buttons	Start / stop separated buttons.
Accurate	Not less than (0.01) sec.

Item No: 1.20

Item Name:

Discharger
Component & Specification

Components	Two metal arms , each ending with plated brass or Aluminum sphere
Handle	Insulating handle.
Sphere Dim.	(10) mm approx.
Overall Length	≥ (25) cm

Item No: <u>1.21</u>	Item Name: <u>Displacement vessel</u>
Component & Specification	
material	metal
dimensions	(115×90) mm approx.
Complete with	Over flow spout

Item No: <u>1.22</u>	Item Name: <u>Ebonite rod</u>
Component & Specification	
Material	Ebonite polished finish.
Dimensions	(300) mm , approx.
length	
dia.	(13) mm. , approx.

Item No: <u>1.23</u>	Item Name: <u>Electric Fan</u>
Component & Specification	
Dimensions	(20) cm dia. approx.
Blades	(3-4) plastic blades.
Input	(220-240) volts, (50) Hz.
Speeds	(2-3) speeds.

Item No: <u>1.24</u>	Item Name: <u>Electroscope</u>
Component & Specification	
Case	Heavy metal rectangular or circular with 4mm earth socket.
Windows	One or two glass windows.
Base	Insulated.
Point r	Aluminum rotatable light rod, balanced in a vertical position, fixed from center.
Dimensions	More than (15×11×6) cm approx.
Accessories	Gold leaves spare 6 pcs in plastic pack
Item No: <u>1.25</u>	Item Name: <u>Electroscope needle</u>
Component & Specification	
Case	Simple to use with sensitive needle Heavy metal & scale angle from (0 to 90) with 4mm earth socket.
Windows	One or two glass windows.
Base	Insulated.

Pointer	<i>Aluminum rotatable light rod, balanced in a vertical position, fixed from center.</i>
Dimensions	<i>More than (11×10×6) cm approx.</i>

Item No:	1.26	Item Name:	Galvanometer
Component & Specification			
Type	<i>Moving coil</i>		
Ranges	<i>(50-0-50) μA</i>		
Scale	<i>Not less than (80) mm</i>		
Sockets	<i>Pair Sockets 4mm</i>		

Item No:	1.27	Item Name:	Hook's law
Component & Specification			
Base & stand	<i>Support steel rod 30 cm approx.</i>		
	<i>Hard Base (12 x 18) cm or more</i>		
	<i>With a hook fitted on the top by screw.</i>		
Scale	<i>15 cm. steel</i>		
	<i>Adjustable scale.</i>		
	<i>Marked in mm.</i>		
	<i>With zero on top.</i>		
Springs	<i>Set of 4 springs with constant hook</i>		
	<i>(5 – 10) cm long each</i>		
	<i>The springs are deferent in strength.</i>		
Mass hanger	<i>Steel with enough indicators to reach the scale.</i>		
Weights	<i>Set of 6 equal weights to demonstrate from (0.5 to 1) N</i>		
	<i>The extension of the spring at equal weights</i>		

Item No:	1.28	Item Name:	Hope's apparatus
Component & Specification			
material	<i>metal</i>		
shape	<i>Two Cylinders</i>		
Inner Cylinder Dimension	<i>Dia 50mm approx.</i>		
	<i>Height 300mm approx. , and there are two tabulators for thermometers</i>		
Mounted on	<i>Base</i>		
Outer Cylinder Dimension	<i>(60× 150) mm approx. for placing mixture, encircled midway of the inner cylinder.</i>		

Item No: 1.29 **Item Name:** Horse shoe magnet

Component & Specification

Material	<i>Alnico, very strong, with keeper</i>
Poles Gap	<i>(25) mm. approx.</i>
Length	<i>About (100) mm.</i>
Section	<i>About (10×15) mm.</i>

Item No: 1.30 **Item Name:** Inclined plane

Component & Specification

Construction	<i>Rigid metal plane (60) cm approx. Long. With base Less than (50) cm approx. Long.</i>
Scales	<i>Angular scale (0-60) degrees. And Longitudinal scale parallel to the plane.</i>
Pulley	<i>Metal or hard plastic pulley with bearing. Mounted at the top of the plane. With a height adjustment.</i>
Accessories	<i>(500) gm. Roller, cord, weight hanger.</i>
mass	<i>Set of (4) (50,100,200,300) gm</i>

Item No: 1.31 **Item Name:** Inducting current coil

Component & Specification

Coil	<i>Cylindrical insulated coil with enough turns.</i>
Core	<i>Iron core inside the coil with transparent plastic cover.</i>
Indicator	<i>LED for power</i>
Switch	<i>On, Off switch give current one time and cut off to prevent coil overheating.</i>
Power	<i>(220) AC volts, (50) Hz.</i>

Item No: 1.32 **Item Name:** Joule's calorimeter

Component & Specification

Material	<i>Copper or Aluminum for inner and outer.</i>
Capacity	<i>Inner vessel half liter or more Outer can be contain the inner one with separating space between inner and outer not less than 1cm</i>
Heating element	<i>Coil (6.0)Ω approx. c rrent (0.5 – 1)A</i>
Design	<i>The inner vessel enclosed within n outer vessel of aluminum.</i>
Accessorie	<i>Close fitting ebonite lid with rubber cork with hole</i>

S	<i>A wire stirrer</i>
	<i>A pair of connection terminals</i>
<i>insulator</i>	<i>Fiber glass between i ner and outer vessel</i>

Item No:	1.33	Item Name:	Large Compass
Component & Specification			
Needle	<i>At least (150) mm.approx.</i>		
Case	<i>Plastic.</i>		
Overall Dia.	<i>(175) mm approx.</i>		
Color	<i>Black and white Or Red and Blue</i>		
Scale	<i>(360) around the edge.</i>		

Item No:	1.34	Item Name:	Latent heat of steam apparatus
Component & Specification			
Material	<i>Thick brass calorimeter with felt cover.</i>		
Capacity	<i>Minimum one liter.</i>		
Complete with	<i>Steam inlet</i>		
	<i>Outlet tubes.</i>		
	<i>Tin plate boiler with bung.</i>		

Item No:	1.35	Item Name:	Leads Set (Banana)
Component & Specification			
Leads Set	<i>Banana plugs.</i>		
	<i>Flexible leads.</i>		
	<i>Double (PVC) covered.</i>		
Material	<i>Copper.</i>		
set of (9) pieces consist of	<i>(25) cm long (red, black, and yellow).</i>		
	<i>(50) cm long (red, black, and green).</i>		
	<i>(100) cm long (red, black, and blue).</i>		
Copper Dia.	<i>Not less than (2)mm with (4) mm plugs</i>		

Item No:	1.36	Item Name:	Leads Set (Crocodile)
Component & Specification			
Leads Set	<i>Crocodile plugs.</i>		
	<i>Flexible leads.</i>		

	<i>Double (PVC) covered.</i>
Material	Copper.
set of (9) pieces consist of	<i>(25) cm long (red, black, and yellow).</i>
	<i>(50) cm long (red, black, and green).</i>
	<i>(100) cm long (red, black, and blue).</i>
Copper Dia.	Not less than (2)mm with (4) mm plugs

Item No:	1.37	Item Name:	Lens holders
Component & Specification			
Material	Good polished wood.		
Number	Set of six.		
Specifications	Each holder has a stable square base & suitable for lenses and mirrors.		
Accessories	There are keys for fix it		

Item No:	1.38	Item Name:	Leslie Cube
Component & Specification			
Material	Metal with an opening hole in one face.		
Dimension	(125) mm side or more		
Faces	(6) faces		
Color of side faces	Dull black		
	Bright black		
	White and bright.		

Item No:	1.39	Item Name:	Lever stick
Component & Specification			
Stick	(50) cm long.		
	Hard plastic stick		
	With scale of cm and mm.		
	Drilled every (20) mm.		
Weight hanger	Set of (4) same hangers to hang on the stick and fit in halls.		
Weights	(6) weights: (20, 20, 50, 50, 100, 200) gm.		

Item No:	1.40	Item Name:	Light box & optical set
Component & Specification			
Light source	Light box		
	Metal <i>or</i> hard plastic box contain cylindrical concave lens		

Completed with	Two or three mirrors	
	(12) Volt lamp and power \geq (24) Watt.	
	Refractors	Double concave lens
		Double convex lens
		An equilateral prism.
		Right angel prism.
		Triangular rectangular
		S micircular blocks.
	Ref ectors	Circular
		Plane
		Parabolic mirrors
	Filters	(8) colored f lters;
		Red, green, blue, cyan, violet, yellow, orange, magenta.
	Slit plates	One slit.
		Three slits
		Five slits plates
	Colored cards	Set of (8) colored cards
		Red, green, blue, cyan, violet, yellow, orange, magenta.
	Optical disk	Circular plate of aluminum
		With (20) cm dia.
		(2) mm thickness.
		with degrees scale
		On the circumference.
Case	Plastic or Wooden box for good storage.	

Item No: 1.41 **Item Name:** **Linear expansion apparatus**

Component & Specification		
Material	Tube nickel plated	
	Two cast pieces, two metal rods.	
Dimension	Long	\geq (50) cm.
	Dia.	(1) cm approx.
Connection	Inlet and outlet for co ection to a steam supply and tubular for thermometer.	
Measuring device	Spherometer or micrometer	
	Reading to (0.01) mm approx.	
Complete with	(3) Metal rods one each of copper.	
	B ass iron & glass.	
	Terminals sockets.	

Item No: 1.42 **Item Name:** **Loud speaker**

Component & Specification	
Dimensions	(100)mm dia. approx.
Impedance	(8) Ω.
Power	(40) Watt.

Terminals	Pair of (4) mm sockets.
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Item No:	1.43	Item Name:	Mechanical Cart
Component & Specification			
Cart	Set of (2) mechanical carts with small friction ball bearing, (3) wheels.		
Dimension of cart	30×10×10 cm approx.		
Impulse	Built-in spring		
	With impulse rod which can give different impulses		
Accessories	Elastic cord and rubber		
	Loop Spring.		
	Trolley run way (1.5) m .long and (30) cm. rings wide approx.		
	(3)Replacement wheels.		
	The cart must go straight with no deviation.		

Item No:	1.44	Item Name:	Meld's apparatus
Component & Specification			
Waves generator	Electric motor or vibrator working on (3-6) volt. D.C		
Base	Metal or heavy plastic.		
Accessories	String.		
	Mass hanger.		
	Mass set.		
	Pulley with clap.		

Item No:	1.45	Item Name:	Meter
Component & Specification			
Material	Antirust stainless steel		
Graduated	100(cm) and (mm).		

Item No:	1.46	Item Name:	Meter Bridge
Component & Specification			
Type	Two gap system for normal Wheatstone bridge work		
Scale	Slide wire meter (100)cm		
	Graduation in mm on both sides		
	With knife edge contact key		
Terminals	(4) mm socket terminal		

Item No: 1.47 **Item Name:** Micrometer

Component & Specification

Material	Nickel- plated brass
Parts	Ratchet top, locknut, oxidized threaded steel rod. plated brass
Range	(0-30) mm. x (0.01) mm approx. .
protective Case	Fine wood or plastic

Item No: 1.48 **Item Name:** Narrow prism

Component & Specification

Shape	Pair of Narrow head angle prism.
Material	Clear glass, With refractive index (1.52) approx. Polished faces.
Dimensions	Head angle Less than (20). Thickness (2) cm Base about (1) cm. High about (6) cm.

Item No: 1.49 **Item Name:** Optical bench

Component & Specification

Bench	From (100-120) cm Long aluminum bench with index marks Built in measuring tape for reading the distance
Light source	High intensity halogen lamp (12) volt (50) w Wi h slide holder.
Accessories	(4) Carriers with screw. (2) Wax candle holders. (2) Convex lenses. (2) Concave lenses. One Cross slit. One Plane mirror. One Convex mirror. One Screen. One screen holder. One Filter holder.

Item No: 1.50 **Item Name:** Optical lenses

Component & Specification		
	Consist of:	
Diverging	(4) Lenses of optical glass.	
	Dia. for everyone	(50) mm.
	Focal length for each	(10, 15, 20, 30) cm.
Converging	(6) Lenses of optical glass.	
	Dia. for everyone	(50) mm.
	Focal length for each	(10, 12.5 , 15, 20, 25, 30) cm.
Deferent	(6) Lenses of optical glass include one.	
Lenses type	Double Convex.	
	Plano Convex	
	Concavo-convex	
	Double concave	
	Plano concave	
	Convexo-concave	
	Diameter of Each one	(50) mm.
	All in wooden or plastic box.	

Item No:	1.51	Item Name:	Pair of Rods
Component & Specification			
Material	Aluminum, copper.		
Long	from (200- 300)mm.		
Diameter	(12) mm.approx.		

Item No:	1.52	Item Name:	Parallel plate condenser
Component & Specification			
Purpose	For demonstration of relation between capacity and distance.		
Plates	Pair of Aluminum plates.		
Dimensions of plate	(10×10) cm approx.		
Sockets	Pair of (4)mm.		
Base	Insulated.		
Accessories	Supplied with (3 different materials and each one of these materials have two plates different in thickness.(total will become 6 plates) ,and the plates should equal in Dimensions of parallel plates .		

Item No:	1.53	Item Name:	Pascal's law set
Component & Specification			
Set	Two apparatus.		
first			
VESSELS	Set of three: cylindrical, conical, and thin shaped vessels		

Vessels Holder	Elastic.
Pressure Measuring	U shape manometer.
Accessories	Tubes set
	Clips.
Base	Strong.
second	
CYLINDERS	Set of 4 various sizes (15,10,5,3) cc.
Main Cylinder	Larger than the other cylinders, about (20) cc.
Connectivity	By jack stand with the main cylinder.
Accessories	A set of connecting hoses
	Valves.
Base	Hard plastic suitable for the main cylinder and other cylinder.

Item No:	1.54	Item Name:	Perspex blocks
Component & Specification			
Material	Perspex		
	All faces fully polished		
	Refractor index about (1.4).		
Shape	Set of three pieces	Rectangular, Semicircular (100× 75 × 25) mm. approx. Glass rod dia.10 mm ×length 10cm as one turn coil.	

Item No:	1.55	Item Name:	Photoelectric effect apparatus with solar cell
Component & Specification			
The Box	A metal box		
Consist	a window, inside it (Ag-Cs) Photoelectric cell, with electronic circuit.		
Switch	(On/Off).		
Adjustment Knobs	For incoming voltage.		
	Incoming current.		
Filters	(6) Colors.		
Sockets	A pair of (4) mm earth sockets to measure incoming current.		
	A pair of (4) mm earth sockets to measure incoming voltage.		
Accessories	Spare photoelectric cell and Instruction booklet.		

Item No:	1.56	Item Name:	Plain mirror
Component & Specification			
Material	Glass with silver coated surface.		

Dimensions	<i>(100×100) mm. approx.</i>
Accessories	<i>Block holder or clip.</i>

Item No:	<u>1.57</u>	Item Name:	<u>Proof plane</u>
Component & Specification			
Disc Or Sphere Of Dia.	<i>Not less than (20) mm.</i>		
Rod	<i>Insulating. Minimum 15 cm approx. length</i>		

Item No:	<u>1.58</u>	Item Name:	<u>Pulley system</u>
Component & Specification			
Set of	<i>(3) Systems of non-parallel pulleys Single, double, and triple pulleys.</i>		
Material	<i>Rigid plastic pulleys with aluminum frames</i>		
Hooks	<i>Two suspension hooks at both ends of each frame</i>		
Dimensions	<i>The single (50) mm. dia.</i> <i>The double (50) and (40) mm. dia.</i> <i>The triple (50), (40), and (30) mm. dia.</i>		

Item No:	<u>1.59</u>	Item Name:	<u>Resistance box</u>
Component & Specification			
Type	<i>none inductive</i>		
Total Resistance	<i>(11110) Ω</i>		
Switch Positions	<i>(4) From:</i> <i>(0-10) × (1) Ω</i> <i>(0-10) × (10) Ω</i> <i>(0-10) × (100) Ω</i> <i>(0-10) × 1k Ω.</i>		
ep	<i>One (Ω) in step</i>		
Sockets	<i>A pair of 4) mm sockets</i>		

Item No:	<u>1.60</u>	Item Name:	<u>Rheostat</u>
Component & Specification			

Type	<i>Tubular, with sliding contact</i>
Resistance	$\geq (100) \Omega$
Max. Current	<i>One Ampe e Approx.</i>
Sockets	<i>(3) at least</i>

Item No:	1.61	Item Name:	<i>Ripple tank</i>
Component & Specification			
Tank	<i>Aluminum frame with (4) detachable legs with screw adjusting foots.</i>		
Working area	<i>Glass or polycarbonates plate (50×30) cm with (5) cm depth approx.</i>		
	<i>Sealed to the frame by special gasket</i>		
	<i>With an integral beach with built-in drain and closure.</i>		
Screen	<i>Large translucent screen.</i>		
Ripple Generator	<i>An electric motor mounted and do not touch the tank, with its controller.</i>		
G. frequency	<i>Variable From (5 to 60) r/s, or wider.</i>		
Generator holders	<i>Two stoppers mounted on stand steel rods,</i>		
	<i>Two point sources exciters.</i>		
	<i>A plane wave exciter.</i>		
Ripple supply	<i>Input of (220) volt, (50) Hz.</i>		
	<i>Two outputs one for the lamp the other for the generator.</i>		
Light source	<i>Halogen dot lamp.</i>		
	<i>(12) volt D.C.</i>		
	<i>(100) watt with support stands.</i>		
	<i>Clamps so it can adjust in height.</i>		
Reflectors	<i>Pair of straight barriers (150×25) mm.</i>		
	<i>Curved reflector with (160) mm curved length</i>		
	<i>(25) mm height.</i>		
	<i>Short straight barrier (25×25) mm.</i>		
Refractors	Set of different shoals shape	<i>Rectangular</i>	
		<i>Triangular</i>	
		<i>Convex lens</i>	
		<i>Concave lens</i>	
	Thickness between	<i>(5 – 10) mm</i>	

Item No:	1.62	Item Name:	<i>Set of Demountable transformer</i>
Component & Specification			
Iron Cores	<i>One iron core (U)-shaped with yoke.</i>		
	<i>One iron core (E)-shaped with yoke.</i>		
	<i>One iron core (I)-shaped</i>		

Coils	<i>One coil of (5) turns of very thick (15A current).</i>
	<i>One coil of (20) turns of very thick (10A current).</i>
	<i>One coil of (40) turns (10A)</i>
	<i>One coil of (100) turns (240 volts).</i>
	<i>One coil of (200) turns (240 volts).</i>
	<i>One coil of (500) turns (240 volts).</i>
	<i>One coil of (1000) turns (480 volts).</i>
	<i>One ring coil with groove clamping device.</i>

Item No:	1.63	Item Name:	Set of Prisms
Component & Specification			
Shape:	<i>(60×60×90) degrees.</i>		
	<i>(30×60×90) degrees.</i>		
	<i>(45×45×90) degrees.</i>		
Material	<i>Clear glass with refractive index (1.52) approx.</i>		
	<i>Polished faces.</i>		
Dimensions	<i>Each Prism has one side not less than (5)cm.</i>		
Thickness	<i>≥ (3) cm.</i>		

Item No	1.64	Item Name:	Set of tuning forks
Component & Specification			
Material	<i>Best quality steel.</i>		
Prong length	<i>(85 – 300) mm.</i>		
Frequencies	<i>(256), (288), (320), (341), (384), (426), (480), (512) ±5 Hz.</i>		
Number	<i>(8) pc./set</i>		
Storage case	<i>Plastic or wood</i>		
Hammer	<i>Rubber</i>		

Item No:	1.65	Item Name:	Set of tuning forks on resonance boxes
Component & Specification			
Box	<i>Pair of identical boxes</i>		
Material	<i>Good finishing hard wood.</i>		
Dimensions	<i>(18 x 9 x 5) cm approx.</i>		
Forks	<i>Pair of identical forks.</i>		
Material	<i>Best quality steel.</i>		
Frequency adjusting	<i>Sliding mass on one of its prongs for each fork.</i>		

Frequencies	Starting from (425) Hz. For each.
Hummer	Rubber

Item No:	1.66	Item Name:	Single pulley
Component & Specification			
Pulley	Single pulley hard plastic		
Frame	Solid brass or steel with suspension hook at the top		
Pulley dia.	(50) mm. approx.		

Item No:	1.67	Item Name:	Small compass
Component & Specification			
Dia.	About (20) mm.		
Scale	Directions marked.		
Case	Plastic.		

Item No:	1.68	Item Name:	Solenoid coil
Component & Specification			
No. Of Turns	More than (80) turns.		
Coil Dia.	About (70) mm approx.		
Base	Isolated two plates one as base second as a sheet passing through the axle of the coil.		
Wire Dia.	(0.5)mm approx.		
Socket	Pair of (4) mm.		
In put	Max (10) VDC		

Item No:	1.69	Item Name:	Spherical conductor
Component & Specification			
Shape	Sphere with dia. (80)mm approx.		
Material	Nickel plated brass or Aluminum.		
Base	Insulated stable durable with insulated rod to mount the conductor.		

Item No:	1.70	Item Name:	Spherical mirror
Component & Specification			

Concave	Set of three mirrors.
	Silver coated front.
	Surface, (75) mm. dia. for each.
Focal length	(15)cm; (20) cm. ,(30) cm.
Convex	Set of three mirrors.
	Silver coated front.
	Surface, (75) mm. dia. for each.
Focal length	(15) cm. ,(25) cm, (30)cm.

Item No:	1.71	Item Name:	Spring balance
Component & Specification			
Set of	(4) balances		
Cover	Transparence plastic tube with colored top		
	Two hooks from top and end.		
	Zero adjustable screw.		
Scale	Both grams.		
	Newton scales.		
Capacity	(250),(500),(1000),(2000) gm.		

Item No:	1.72	Item Name:	Standard resistance units
Component Specification			
Type	Non-inductive, separated inside plastic box.		
Resistances	(5) Ω, \pm (0.05), (1) watt. Approx.		
	(10) Ω, \pm (0.05), (1) watt. Approx.		
	(50) Ω, \pm (0.05), (1) watt. Approx.		
	(100) Ω, \pm (0.05), (1) watt. Approx.		
	(200) Ω, \pm (0.05), (1) watt. Approx.		
	(500) Ω, \pm (0.05), (1) watt. Approx.		
Sockets	A pair of (4) mm for each		

Item No:	1.73	Item Name:	Stroboscope
Component & Specification			
Model	Digital Xenon lamp stroboscope		
Lamp	Xenon, (15) watt or more		
Flash rate	(30-10000) flash/minute		
Input	(220-240) volts AC, (50) Hz		
Case	Hard plastic or metal with handle		
Display	Digital		
Accessories	(2) spare lamps		
	Stroboscope disk of (10) different graph's with holder.		

Item No: 1.74 **Item Name:** **Thermometer (alcohol C °)**

Component & Specification	
Type	Colored alcohol in clear glass.
Scale	From (- 10) to (+50) C°.
Subdivision	(1) C°.
length	About (300) mm.

Item No: 1.75 **Item Name:** **Thermometer (alcohol F°)**

Component & Specification	
Type	Colored alcohol in clear glass.
Scale	From (-10) to (+150) F°.
Subdivision	(2) F°.
Length	About (300) mm.

Item No: 1.76 **Item Name:** **Thermometer (Mercury C °)**

Component & Specification	
Type	Mercury in clear glass.
Calibrated	From (-20) to (+110) C°.
Subdivision	(1) C° or less.
Length	About (300) mm.

Item No: 1.77 **Item Name:** **Thermopile**

Component & Specification	
Material	Copper and constantan
Number pairs	≥ (12) pairs of thermocouples joined together in series.
Fixing	The couples are enclosed in a metallic frame.
Complete with	Metallic cone & adjustable stand.
Sockets	A pair of (4) mm sockets.

Item No: <u>1.78</u>	Item Name: <u>Ticker tape timer</u>
Component & Specification	
Operation	Give a spark on the tape, use A.C. Power.
Material	(50-60) Hz. 220 volt with cord & plug.
	With adjustable discharge needles.
Clamp	Padded clamp to attach on the table.
Type	Electromagnetic
Accessories	Two paper rolls of (40) m approx. long and (10) mm approx.
	Wide recording tape.

Item No: <u>1.79</u>	Item Name: <u>Triangular Stand</u>
Component & Specification	
Shape	Triangular.
Material	metal
Legs Shape	Welded legs bent out –wards.
Length	One side (150 -170)mm.
Height	(200) mm approx.

Item No: <u>1.80</u>	Item Name: <u>Triple beam balance</u>	
Component & Specification		
Base	Rigid base with solid construction.	
Pan	Removable Stainless steel rimless pan dia. about (15) cm	
Dimensions	long	(30) cm approx.
	Wide	(15) cm approx.
	High	(20) cm approx.
Capacity	Front beam	(10) × (0.1) g.
	center beam	(500) × (100) g.
	Back beam	(100 × (10) g.
Supplementary	Masses to make the balance weigh up to	
Masses	(2.6) kg.	
Complete with	Spring lauded zero adjusts.	

Item No:	1.81	Item Name:	U-shape magnet
Component & Specification			
Material	Alnico.		
	Very strong.		
	With keeper.		
Length	About (60)mm		
Thickness	About (10) mm.		
Distance Between Poles	About (20) mm		
Case	Plastic.		

Item No:	1.82	Item Name:	<u>VAN DE GRAAFF GENERATOR</u>
Components& Specification			
Dome material Dia.		Removable sphere.	
		Polished aluminum.	
		More than (175) mm dia.	
Belt		Genuine leather.	
Connections		(4) mm earth sockets in dome and base.	
Collecting Combs		Aluminum mesh.	
Voltage Developed		Up to (250) kV.	
Discharge Spherical	Dia.	More than (70)mm dia.	
	Material	Polished Aluminum.	
	Insulating	Mounted on insulating rod.	
	Grounding	With (4) mm socket.	
Spark Length		(60) mm or more.	
Power		(220 - 240) V/ (50) Hz. On/off switch and fuse.	
Set Of Accessories		Faraday's Pail of Aluminum with base	
		Perspex cylinder with suspended.	
		Hollow Metal sphere.	
		Head of hair.	
		Point Discharge	
		Neon bulb	
		Two spare belts.	
		Electric tester.	
		Electric whirl.	
		Fuse, comb.	

<u>Item No:</u>	<u>1.83</u>	<u>Item Name:</u>	<u>Vernier calipers</u>
Component & Specification			
<u>Purpose</u>	<i>Measuring length</i>		
	<i>Internal</i>		
	<i>External dimensions</i>		
	<i>Depth.</i>		
<u>Measurements</u>	<i>Taken at a reading window with scale in mm (150mm × 0.1mm) approx.</i>		
<u>Complete with</u>	<i>Thumb wheel.</i>		
<u>Material</u>	<i>Antirust high quality steel.</i>		
<u>Protective case</u>	<i>Fine wood or plastic</i>		

<u>Item No:</u>	<u>1.84</u>	<u>Item Name:</u>	<u>Voltmeter (DC)</u>
Component & Specification			
Ranges	Three ranges min. (3),(30),(300) V.		
Scale	Not less than(50) mm		
Accuracy	(3.33%) of the range		
Adjustment	Zero adjustment		

<i>Item No:</i>	<i>1.85</i>	<i>Item Name:</i>	<i>weights</i>
<i>Component & Specification</i>			
<i>Number</i>	<i>(10) pc./set</i>		
<i>capacity</i>	<i>2x5 gm</i>		
	<i>4x10gm</i>		
	<i>1x50 gm</i>		
	<i>2x100 gm</i>		
	<i>1x200 gm</i>		
<i>Join with</i>	<i>hooks on both sides</i>		
<i>material</i>	<i>Weight brass</i>		

<u>Item No:</u>	<u>1.86</u>	<u>Item Name:</u>	<u>Young's Modulus Apparatus</u>
Component & Specification			
Base	Metal		
Vernier	Moveable readable to (0.1)mm or Micrometer		
Wires	Six wires of stainless steel with different diameters and length of not less than (7)m		
weight set	(1 , 2 , 5, 10) kg, with weight holder		

2. List of Chemistry Lab Material and Equipment

2.1 Acetic Acid

Molecular Formula	CH ₃ COOH
Packing	(1000)ml
Assay	(99)%
Physical State	Glacial, liquid

2.2 Aluminium Metal

Molecular Formula	Al
Packing	(250)gr
Physical State	Solid
Appearance	Silver Coarse
Container	Sealed in Plastic bottle

2.3 Amber color glass Reagent Bottle 125ml

Glass	Soda
Notes	Narrow mouth with acid proof polypropylene stopper

2.4 Amber color glass Reagent Bottle 250ml

Glass	Soda
Notes	Narrow mouth with acid proof polypropylene stopper

2.5 Amber Dropping bottle

Capacity	(60)ml
Notes	Amber color bottle: with ground glass grip stopper and spout.

2.6 Ammonium Chloride

Molecular Formula	NH ₄ CL
Packing	(500)gr
Purity	(99)%
State	Solid
Appearance	White crystalline powder
Container	Sealed in Plastic bottle

2.7 Ammonium dichromate

Molecular Formula	(NH ₄) ₂ Cr ₂ O ₇
Packing	(100)gr
Assay	(95-99)%
Physical State	Solid
Appearance	Bright orange-red crystals
Container	Sealed in Plastic bottle

2.8 Ammonium hydroxide

Molecular Formula	NH ₄ OH
Packing	(1000)ml
Assay	(25)%
Physical State	liquid
Appearance	Colorless

2.9 Ammonium Nitrate

Molecular Formula	NH ₄ NO ₃
Packing	(100)gr
Assay	(99)%
Physical State	Solid
Appearance	Transparent crystals or white powder
Container	Sealed in Plastic bottle

2.10 Atomic set Model

Material	The atoms made of Hard plastic.			
	And Bond links made of flexible plastic tubes.			
Atoms are given as				
	No of atoms	color	No of holes	Dia.
	10	black	4	22
	15	white	1	15
	6	red	32	20
	4	blue	4	22
	4	green	1	20
	1	green	4	22
	1	yellow	2	20
	1	yellow	4	22
	1	purple	4	22
	2	orange	1	20
	2	purple	1	20
	2	grey	1	15
	1	grey	2	20
	1	grey	4	22
	10	grey	long bond	32
	30	grey	medium bond	18
30	grey	short bond	10	

2.11 Barium Chloride Dihydrate

Molecular Formula	BaCl ₂ .2H ₂ O
Packing	(250)gr
Assay	(95-99)%
Physical State	Solid
Appearance	Colorless to white crystalline solid or powder
Container	Sealed in Plastic bottle

2.12 Beaker 1000ml

Glass	Borosilicate
Graduated	Yes
Notes	With spout, with rim, permanent amber graduated Borosilicate clear glass.

2.13 Beaker 100ml

Glass	Borosilicate
Graduated	Yes
Notes	With spout, with rim, permanent amber graduated Borosilicate clear glass

2.14 Beaker 10ml

Glass	Borosilicate
Graduated	Yes
Notes	With spout, with rim, permanent amber graduated Borosilicate clear glass

2.15 Beaker 250ml

Glass	Borosilicate
Graduated	Yes
Notes	With spout, with rim, permanent amber graduated Borosilicate clear glass

2.16 Beaker 25ml

Glass	Borosilicate
Graduated	Yes
Notes	With spout, with rim, permanent amber graduated Borosilicate clear glass

2.17 Beaker 500ml

Glass	Borosilicate
Graduated	Yes
Notes	With spout, with rim, permanent amber graduated Borosilicate clear glass

2.18 Beaker 50ml

Glass	Borosilicate
Graduated	Yes
Notes	With spout, with rim, permanent amber graduated Borosilicate clear glass

2.19 Beehive shelves

Shape	Cylindrical
(External dia.)	(7.5) cm
Specifications	Porcelain.
	Glazed inside and outside.
	With upper whole dia. (2)cm, approx.
	This item must have suitable with item no (3).

2.20 Blue Litmus Papers

Packing	Pack in cardboard case of 5 books , each with 20 leaves (total 100 leaves)
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2.21 Boiling flask (Round bottom) 500ml

Glass	Borosilicate (quick fit)
Socket size	24/29
Notes	One neck.

2.22 Bunsen burner

Material	Made of nickel-plated brass.
Advanced	Flame failure device, auto shut off after (20) sec.
	Screw adjustable air regulator.

2.23 Burette

Glass	Borosilicate
Capacity	(50)ml subdivision (0.1)ml
Graduated	Yes
	With single straight bore.
Notes	Teflon stopcock.
	Blue ceramic graduation.

2.24 Calcium Chloride Anhydrous

Molecular Formula	CaCl ₂
Packing	(250)gr
Assay	(99)%
Physical State	Solid
Appearance	White beads or powder
Container	Sealed in Plastic bottle

2.25 Calcium Hydrogen Carbonate

Molecular Formula	CaHCO ₃
Packing	(250)gr
Assay	(99)%
Physical State	Solid
Appearance	White powder
Container	Sealed in Plastic bottle

2.26 Calcium Hydroxide

Molecular Formula	Ca(OH) ₂
Packing	(500)gr
Assay	(99)%
Physical State	Solid
Appearance	White Powder
Container	Sealed in Plastic bottle

2.27 Calcium Metal

Molecular Formula	Ca
Packing	(100)gr
Assay	(99)%
Physical State	Solid
Appearance	softish silver-white metal
Container	Sealed in safety dark bottle

2.28 Calcium Oxide

Molecular Formula	CaO
Packing	(100)gr
Assay	(99)%
Physical State	Solid
Appearance	White to grey solid
Container	Sealed in Plastic bottle

2.29 Clear Dropping bottle

Capacity	(60)ml
Notes	Clear glass bottle: with ground glass grip stopper and spout.

2.30 Clear glass Reagent Bottle 125ml

Glass	Soda
Notes	Narrow mouth with acid proof polypropylene stopper.

2.31 Clear glass Reagent Bottle 250ml

Glass	Soda
Notes	Narrow mouth with acid proof polypropylene stopper.

2.32 Clear Safety Goggles

Completely cover eyes from all sides, unbreakable, lightweight, with adjustable elastic band.
Can be used over normal spectacles.

2.33 Cobalt (II) Chloride Hexahydrate

Molecular Formula	CoCl ₂ .6H ₂ O
Packing	(50)gr
Assay	(99)%
Physical State	Solid
Appearance	pink to red powder
Container	Sealed in Plastic bottle

2.34 Copper

Molecular Formula	Cu
Packing	(500)gr
Assay	(99)%
Physical State	Solid
Appearance	Powder Distinctive reddish color
Container	Sealed in Plastic bottle

2.35 Copper (II) Nitrate Tri hydrate

Molecular Formula	Cu(NO ₃) ₂ .3H ₂ O
Packing	(100)gr
Assay	(99)%
Physical State	Solid
Appearance	Blue crystalline solid
Container	Sealed in Plastic bottle

2.36 Copper (II) Sulphate Anhydrous

Molecular Formula	CuSO ₄
Packing	(500)gr
Assay	(99)%
Physical State	Solid

2.37 Copper (II) Sulphate Pentahydrate

Molecular Formula	CuSO ₄ . 5H ₂ O
Packing	(500)gr
Assay	(99)%
Physical State	Solid
Appearance	Blue crystalline solid
Container	Sealed in Plastic bottle

2.38 Copper Oxide

Molecular Formula	CuO
Packing	(100)gr
Assay	(99)%
Physical State	Solid
Appearance	Black crystalline powder
Container	Sealed in Plastic bottle

2.39 Cork Borers brass

Set of	(12)
Material	Nickel plated finish
Dia.	(4-18)mm
Additional accessories	Complete with cleaning rod having good grip and pipes of thick gauge.

2.40 Crucible tongs

Shape	Straight tongs with corrugated jaws.
Material	Stainless steel
Length	(200) mm approx.

2.41 Crucibles 50ml

Specifications	Porcelain, glazed inside and outside.
	Tall form with lid (cover).

2.42 Desicator

Glass	Borosilicate
Diameter	(25)cm approx
Notes	With lid inter changeable contain stop cock made from clear borosilicate glass.
	Overall height (300)mm approx.

2.43 Disposable Gloves

Material	Latex; sterilized lightly textured fingers and palm surface for a good grip with cuff-ends.
Size	(8) Inch approx .
Pack of	(100).

2.44 Disposable graduated pipettes

Pack of	(10)
Material	Translucent plastic.
Resistant to	Acids.
	Alkalis.
Length	(15) cm
Capacity	(3 × 0.5)ml.

2.45 Disposable Mask

Pack of	(50) Pieces.
Supplied with	Cool and comfortable with metal nose clip. Sterilized.
	Allows the masks to be moulded to the contours of the wearers face.
	With elastic straps.
Note	Allow normal breathing and speech.
	Let air pass freely

2.46 Distillation head

Glass	Borosilicate (quick fit)
Socket & cone size	(24/29)
Notes	With socket for thermometer sleeve and matching cones for flask and condenser.

2.47 Electronic Balance

Weighing	Weighing in grams.
Display	Large LCD.
	(6) Digits.
Capacity	Capacity (2000)gm. Not provided by same specs, Capacity of 1200gm
Accuracy	(0.1)gm What is provided by bidder (0.01gm)
	(220)V- (50) Hz .Ac. and can be operated on a low battery, fuse protection.
Operating voltage	Supplied with chargeable device.

	Automatic shut off after 2 minutes when not used.
	Stainless steel.
Weighing Pan	Dia.(8) cm approx.
	Services manual in Arabic and English language, maintenance drawing. Arabic Translation should be provided

2.48 ERLENMEYER (Conical flask)100ml

Glass	Borosilicate.
Graduated	Yes.
Notes	Narrow neck

2.49 ERLENMEYER (Conical flask)250ml

Glass	Borosilicate.
Graduated	Yes.
Notes	Narrow neck

2.50 ERLENMEYER (Conical flask)500ml

Glass	Borosilicate.
Graduated	Yes.
Notes	Narrow neck

2.51 ERLENMEYER (Conical flask)50ml

Glass	Borosilicate.
Graduated	Yes.
Notes	Narrow neck

2.52 Evaporation basin 50ml

Specifications	Porcelain, glazed inside and outside.
	Tall form with lid (cover).

2.53 Filter funnel

Set of	(2)
Material	Polypropylene.
Resistant to	Acid. Alkalis. Oils. Spirits.
Stem	80mm approx.
Funnel Dia.	(50)mm, (100)mm

2.54 Filter Paper

Pack of	(100) sheets
Dia	(11) cm and(18) cm
Retention & flow rate	Medium
Wet burst	Good quality paper.

2.55 Filtering flask 250ml

Glass	Borosilicate
Graduated	Yes
Notes	Conical. With integral side arm.

2.56 Filtering flask 500ml

Glass	Borosilicate
Graduated	Yes
Notes	Conical. With integral side arm.

2.57 Fire Blanket

Material	Woven with glass fiber material
	Wall mounting container plastic cabinet
	With flame proof thread stitching through out
Dimension	(100)× (100)cm approx.
	With label containing using printed instruction and any other
Note	Information on the fire blanket in both English and Arabic language. Arabic Translation should be provided

2.58 Flask Brush

	Galvanized wire stem
Shape & material	With nylon end.
	With fan-shaped end.
Overall length	(480)mm approx.
Suitable for	Round bottom flask

2.59 Fractional column

Glass	Borosilicate (quick fit)
Socket & cone size	(24/29)
Notes	Removable effective.
	Length (400) mm.

2.60 Funnel stand

Material	Wooden polished with clamping screw
Consist of	Rods (460×16) mm approx (length × Dia.) Double base size (290× 110 × 20) mm approx (L × W × D). Fitted with rubber feet.

2.61 Gas jars

Shape	Cylindrical shape.
Height× dia.	(20× 5) cm
Specifications	With suitable gas jar glass made from glass and ground one side. Clear and heavy duty glass with suitable. Circular sheet glass ground one side.

2.62 Graduated Measuring Cylinder 100ML

Glass	Borosilicate
Graduated	yes
Notes	Uniform wall thickness.
	White enamel.
	Single graduated metric scale.
	Pour-out and a molded base.
	They can be used with acids, Bases. Salt solutions, Organic solutions.

2.63 **Graduated Measuring Cylinder 250ML**

Glass	Borosilicate
Graduated	yes
Notes	Uniform wall thickness.
	White enamel.
	Single graduated metric scale.
	Pour-out and a molded base.
	They can be used with acids, Bases. Salt solutions, Organic solutions.

2.64 **Graduated Measuring Cylinder 50ML**

Glass	Borosilicate
Graduated	yes
Notes	Uniform wall thickness.
	White enamel.
	Single graduated metric scale.
	Pour-out and a molded base.
	They can be used with acids, Bases. Salt solutions, Organic solutions.

2.65 **Graduated pipettes 10ml**

Glass	Borosilicate
Graduated	Yes
Notes	With ceramic graduation.
	Calibrated to deliver from zero at top.

2.66 **Graduated pipettes 25ml**

Glass	Borosilicate
Graduated	Yes
Notes	With ceramic graduation.
	Calibrated to deliver from zero at top.

2.67 **Hoffman voltmeter**

Glass	Borosilicate
Graduated	Outer limbs graduated 50*0.2 ml
Notes	With power supply (12)volts D.C.
	One pair of platinum electrodes. ,8cm length.
	One pair of carbon electrodes mounted in rubber,8cm length.
	Metal stand (60cm height of stand), Support with clamp,
	With PTFE key stopcock.

2.68 Hot plate with magnetic stirrer

Heated plate	Square hot plate made of stainless steel.
	Dimension (15× 15)cm. approx.
Temperature variable	(30 – 450)C
Speed variable	(50 -1500) r.p.m
Operating voltage	(220)V/(50)Hz .Ac.
Heating controlled	By high quality regulator.
	Heater on indicator light.
Speeding controlled	By high quality regulator.
	Speed on indicator light.
Additional specifications	With foot ground cord and plug to operate.
	The heat switch and the speed switch separated, graduated in subdivisions
	steps.
	Made from PTEF follower bars.
	Magnetic stirrer Center rim length (30-35) mm.
	Dia. (10) mm approx.
	All external surfaces Made of an attractive heat.
	Scratch resistant stove epoxy polyester paint.
	Services manual in Arabic and English language, maintenance drawing. Arabic Translation should be provided

2.69 Hydrochloric Acid

Molecular Formula	HCl
Packing	(1000)ml
Assay	35%
Physical State	Liquid
Container	Sealed in glass bottle

2.70 Iodine

Molecular Formula	I ₂
Packing	(100)gr
Assay	(99)%
Physical State	Solid
Appearance	Purple to black crystals
Container	Sealed in dark Plastic bottle

2.71 Iron (III) Chloride

Molecular Formula	FeCl ₃
Packing	(100)gr
Assay	(98)%
Physical State	Solid
Appearance	Black crystalline powder
Container	Sealed in Plastic bottle

2.72 Iron (III) Nitrate Nano-hydrate

Molecular Formula	Fe(NO ₃) ₃ .9H ₂ O
Packing	(100)gr
Assay	(98)%
Physical State	Solid
Appearance	Powder
Container	Sealed in Plastic bottle

2.73 Iron (III) Oxide

Molecular Formula	Fe ₂ O ₃
Packing	(100)gr
Assay	(85)%
Physical State	Solid
Appearance	Powder
Container	Sealed in Plastic bottle

2.74 Iron filling

Molecular Formula	Fe
Packing	(500)gr
Assay	(99)%
Physical State	Solid
Appearance	grey crystalline powder
Container	Sealed in Plastic bottle

2.75 Iron Wire Gauge (Gause)

Pack of	(10)
Shape & material	Extra strong quality of wire
	Square shaped depressed circular ceramic center
length	Dimension (150x150) mm

2.76 Lead (II) Nitrate

Molecular Formula	Pb(NO ₃) ₂
Packing	(100)gr
Assay	(99)%
Physical State	Solid
Appearance	White crystalline powder
Container	Sealed in Plastic bottle

2.77 Leibig Condenser

Glass	Borosilicate (quick fit)
Socket & cone size	24/29
Notes	Inner tube, fused into outer jacket
	Effective length 300mm

2.78 Magnesium Chloride

Molecular Formula	MgCl ₂
Packing	(100)gr
Assay	(97)%
Physical State	Solid
Appearance	White powder
Container	Sealed in Plastic bottle

2.79 Magnesium Oxide

Molecular Formula	MgO
Packing	(250)gr

2.80 Magnesium Ribbon

Molecular Formula	Mg
Packing	(25)gr
Assay	(99)%
Physical State	Solid
Appearance	silver or grey Ribbon
Container	Sealed in carton case

2.81 Magnesium Sulphate

Molecular Formula	MgSO ₄
Packing	(500)gr
Assay	(99)%
Physical State	Solid
Appearance	Colorless crystals
Container	Sealed in Plastic bottle

2.82 Magnesium Turnings

Molecular Formula	Mg
Packing	(100)gr
Assay	(99)%
Physical State	Solid
Appearance	silver or grey Turnings
Container	Sealed in Plastic bottle

2.83 Magnetic rotors

Material	PTFE coated permanent magnetic rotors.
Shape	Straight

	Type	(Length × dia.) mm	Pack size
	A	12 X 6	12
Sizes	B	18 X 8	12
	C	25 X 8	12

2.84 Magnetic rotors rod

Material	PTFE coated permanent magnetic
Shape	Straight
Sizes (length × dia.)	(100 × 8) mm approx.

2.85 Mohr Clip

Material	Nickel plated brass
shaped	Flexible fingers grips with strong flat jaws.
Length	(50) mm approx.

2.86 Mortar and pestle

(External dia.)	(15) cm
Specifications	Porcelain, glazed outside and unglazed grinding surface.

2.87 Naphthalene

Molecular Formula	C ₁₀ H ₈
Packing	(500)gr
Assay	(99)%
Physical State	Solid
Appearance	White crystals
Container	Sealed in Plastic bottle

2.88 Nitric Acid

Molecular Formula	HNO ₃
Packing	(1000)ml
Assay	(65)%
Physical State	Liquid
Appearance	Color less, yellowish
Container	Sealed glass bottle

2.89 Pair of Carbon electrodes

Length	(200)mm
Supplied in	With plastic holder for easy adjustment of electrodes.

2.90 Periodic Table Chart

Printed on	Polyart plastic sheet.
	Colored.
	fitted with plastic roller
Chart dimension	(100)× (78)cm

Consist with	Atomic number. Atomic mass. Name. Symbol. Electron shell. Ionization potential. Density. Boiling point. Melting point. Showing (112) element picture in multicolour
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2.91 pH and temperature meter

pH range	(0) – (14)
Accuracy	(±0.01)pH
Temperature range	(0) –(100)oC
Temperature resolution	(0.1 /C
Display	(3) Digit LCD read out showing pH and Temp.
Operating voltage	(220)V/(50)Hz .Ac Can be operated on a chargeable low battery. fuse protection
Complete with	Chargeable device. Combination electrode
Additional specifications	Electrode stand. Buffer solution (4, 7, 10) (50) ml for each. With spare electrode. Services manual in Arabic and English language, maintenance drawing. Arabic Translation should be provided

2.92 Pipette Bulb 10ml

Glass	Borosilicate
Graduated	Single graduation on upper stem
Notes	Bulb form.
Color Coded	Red

2.93 Pipette Bulb 1ml

Glass	Borosilicate
Graduated	Single graduation on upper stem
Notes	Bulb form.
Color Coded	Blue

2.94 Pipette Bulb 2ml

Glass	Borosilicate
Graduated	Single graduation on upper stem
Notes	Bulb form.
Color Coded	Orange

2.95 Pipette Bulb 5ml

Glass	Borosilicate
Graduated	Single graduation on upper stem
Notes	Bulb form.
Color Coded	White

2.96 Pipette Filler (Pi-Pump)

Material	PTEF.
	Silicone rubber for moulded chuck.
Resistant to	Acid.
	Alkalis.
Notes	The moulded plastic chuck has silicon rubber collets inside to hold
	various pipettes of standard sizes. Capacities available 25ml.

2.97 Plates for Electrolysis

Set of	(6)
Dimension of plate	(100) mm× (40) mm approx. (length X width)
Plate material	Pure copper, thickness (1.5) mm approx.
	Pure lead, thickness (1.5) mm approx.
	Pure zinc, thickness(1.5) mm approx.
	Pure iron, thickness (1.5) mm approx.
	Pure silver, thickness (1) mm approx.
	Pure carbon, thickness (7) mm approx.
Additional accessories	Fitted with 4 mm socket terminals

2.98 Pneumatic Trough

Material	Polypropylene.
Resistant to	Corrosion.
diameter	(250)mm approx.
height	(100)mm approx.

2.99 Pneumatic trough

Glass	Soda
Height x Dia.	(125×300) mm approx.
Notes	Clear glass

2.100 Potassium Aluminum Sulphate

Molecular Formula	AlK(SO ₄) ₂
Packing	(500)gr
Assay	(99)%
Physical State	Solid
Appearance	Granulated
Container	Sealed in Plastic bottle

2.101 Potassium Bromide

Molecular Formula	KBr
Packing	(500)gr
Assay	(99)%
Physical State	Solid
Appearance	Granulated
Container	Sealed in Plastic bottle

2.102 Potassium Carbonate Anhydrous

Molecular Formula	K ₂ CO ₃
Packing	(250)gr
Assay	(99)%
Physical State	Solid
Appearance	powder
Container	Sealed in Plastic bottle

2.103 Potassium chromate

Molecular Formula	K ₂ CrO ₄
Packing	(250)gr
Assay	(99)%
Physical State	Solid
Appearance	Lemon yellow crystals
Container	Sealed in Plastic bottle

2.104 Potassium Dichromate

Molecular Formula	K ₂ Cr ₂ O ₇
Packing	(250)gr
Assay	(99)%
Physical State	Solid
Appearance	Orange-red crystals
Container	Sealed in Plastic bottle

2.105 Potassium Hydroxide

Molecular Formula	KOH
Packing	(500)gr
Assay	(99)%
Physical State	Solid
Appearance	White crystals, pellets
Container	Sealed in Plastic bottle

2.106 Potassium Iodide

Molecular Formula	KI
Packing	(100)gr
Assay	(99)%
Physical State	Solid
Appearance	White crystals
Container	Sealed in Plastic bottle

2.107 Potassium Nitrate

Molecular Formula	KNO ₃
Packing	(100)gr
Assay	(99)%
Physical State	Solid
Appearance	White crystals Powder
Container	Sealed in Plastic bottle

2.108 Potassium Permanganate

Molecular Formula	K MnO ₄
Packing	(250) gr
Assay	(99)%
Physical State	Solid
Appearance	Black crystals
Container	Sealed in darkened glass bottle

2.109 Potassium Sulphate

Molecular Formula	K ₂ SO ₄
Packing	(500)gr
Assay	(99)%
Physical State	Solid
Appearance	White Powder
Container	Sealed in Plastic bottle

2.110 PVC tubes OD=9mm

Material	Flexible ,seamless non-toxic translucent
	resistant to chemicals and tempt
Length of rolls	(10) m
Bore (wall thickness)	9mm. (3)mm
Color	Colorless

2.111 Receive adapter

Glass	Borosilicate (quick fit)
Socket & cone size	(24/29)
Notes	With vacuum connection.

2.112 Red Litmus Papers

Packing	Pack in cardboard case of 5 books , each with 20 leaves (total 100 leaves)
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2.113 Retort stand

Set of	(6)	
Material	Comprising rust less alloy.	
Consist of	Rectangular base	(160x250)mm approx.,
		With tapped hole
		Finished in blue / black color.
		With rubber feet.
	Rod of stainless steel	length (600)mm
		Dia. (12)mm approx.
	Rod of stainless steel	Length (1000)mm
		Dia. (12)mm approx.
		Two prong.
		Die casted with other parts brass

	Universal clamp	accepts articles from (15- 60) mm. dia.
		Actuated by nickel plated brass pummels and twin screw
		The jaws are crock lined. Fitted with (15)cm.
		Long mild steel rod.
	Retort ring	Plated mild steel with 8mm. diameter stem.
		70mm (I.D of ring)
		140 mm (length of stem).
	Boss head clamp	holder for rods up to (14) mm dia.

2.114 Rubber Gloves

Usage	General purpose, raised surface pattered for excellent wet grip.
Resistant to	Acid and alkali.
Size	(12) inch approx.

2.115 Rubber Tubes OD=12,5mm

Material	High pressure
	Extra soft quality of rubber
	Flexible nontoxic – resistant to chemicals and tempt.
Length of rolls	(10) m
Bore (wall thickness)	12.5mm. (6.5)mm
Color	Red or Black

2.116 Rubber Tubes OD=6mm

Material	High pressure
	Extra soft quality of rubber
	Flexible nontoxic – resistant to chemicals and tempt.
Length of rolls	(10) m
Bore (wall thickness)	(6)mm. (4.5)mm
Color	Red or Black

2.117 Safety Thistle funnel

Glass	Borosilicate	
Notes	safety thistle funnel	With bend and two safety bulb (dia. 22mm) Length(300)mm.

2.118 Salt bridge

Glass	Borosilicate	
Notes	(U) Tube shape. Length 30mm	
	Dia. of arms	(13)mm. approx.
	Over all width	(80)mm. approx.
	height	(100)mm. approx.

2.119 Separating funnel

Glass	Borosilicate
Capacity	(500) ml
Notes	Conical.
	Interchangeable plastic stopper.
	PTFE key stopcock.

2.120 Silver Nitrate

Molecular Formula	AgNO ₃
Packing	(25)gr
Assay	(99)%
Physical State	Solid
Appearance	Colorless crystals
Container	Sealed in darkened bottle

2.121 Sodium Acetate

Molecular Formula	NaC ₂ H ₃ O ₂
Packing	(100)gr
Assay	(99)%
Physical State	Solid
Appearance	White crystals or powder
Container	Sealed in Plastic bottle

2.122 Sodium Carbonate

Molecular Formula	Na ₂ CO ₃
Packing	(500)gr
Assay	(99)%
Physical State	Solid
Appearance	white powder
Container	Sealed in Plastic bottle

2.123 Sodium Carbonate Monohydrate

Molecular Formula	Na ₂ CO ₃ · H ₂ O
Packing	(500)gr
Assay	(99)%
Physical State	Solid
Appearance	White, granular
Container	Sealed in Plastic bottle

2.124 Sodium Hydrogen Carbonate

Molecular Formula	NaHCO ₃
Packing	(500)gr
Assay	(99)%
Physical State	Solid
Appearance	white powder or crystals
Container	Sealed in Plastic bottle

2.125 Sodium Hydroxide

Molecular Formula	NaOH
Packing	(500)gr
Assay	(99)%
Physical State	Solid
Appearance	White Pellets
Container	Sealed in Plastic bottle

2.126 Sodium Sulphate

Molecular Formula	Na ₂ SO ₄
Packing	(250)gr
Assay	(99)%
Physical State	Solid
Appearance	White crystals or powder
Container	Sealed in Plastic bottle

2.127 Spectrum Tube Stand With Power Supply

Dimensions	(37)× (11.5)× (7.5) cm (Approx)
Operating voltage	(220) volts AC/(50)Hz
Other features	An on /off switch and pilot light.
Notes	The components are housed in metal box fitted with a 6 feet grounded power cord.
	Sockets are fully shielded to prevent electric shock.
	The bottom sockets is spring loaded for easy changing of tubes
	Must be suitable for item 4

2.128 Spectrum Tubes

Set of	(7) Tubes
Shape	Straight form. With side electrodes.
Dimensions of tube	(200) × (6,5) mm (length X diameter)
	(50) mm fine capillary in the middle.
Filled with gas or vapor	Oxygen, Neon, Helium, Nitrogen, Argon, Hydrogen and Mercury.
	(At low pressure).

2.129 Stainless steel spatula

Set of	(3)
Material & shape	Stainless steel
	One end flat and the other spoon form, polished.
Length	(12.5),(15),(20) cm approx.

2.130 Stirring Rod

Glass	Borosilicate
Pack of	(10)
Notes	Dia. (8)mm, length (300)mm, Spade and button ends.

2.131 Stoppers

Material	High quality of cork solid
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Sizes(approx.)	Type	Bottom (mm)	Top(mm)	Length(mm)	Pack size
	A	5	8	13	10
	B	7	10	13	10
	C	9	13	17	10
	D	11	16	20	10
	E	13	19	24	10
	F	15	22	27	10
	G	18	24	29	10
	H	20	25	31	10
	I	22	29	31	10
	J	24	30	31	10
	K	27	35	38	10
	L	31	38	38	10
	M	34	41	38	10
	N	36	43	38	10
	Q	39	46	38	10

2.132 Sulphur

Molecular Formula	S
Packing	(100)gr
Assay	(99)%
Physical State	Solid
Appearance	yellow powder
Container	Sealed in Plastic bottle

2.133 Sulphuric acid

Molecular Formula	H ₂ SO ₄
Packing	(1000)ml
Assay	(98)%
Physical State	Liquid
Appearance	Color less liquid
Container	Sealed glass bottle

2.134 Test Tube Brush

Set of	(2)
Shape & material	Galvanized wire stem With bristle end &With fan-shaped end.
Dia. of head	(11) ,(29)mm approx
Overall size	(200-230)mm approx
Suitable for	Tubes dia.(10-12) , (16-25)

2.135
Test Tube Holder

Material	hard wood, with strong steel spring
length	(180) mm approx.
Note	Suitable for tubes dia. (11 - 18) mm approx.

2.136 Test Tube Stand

Material	Polypropylene
Resistant to	Strong acids. Alkalis. Continuous heat up to(150)° C.
Consist with	(2)holes for holding (25)mm dia. test tubes
	(4) holes for holding (16)mm dia test tubes.
	(6) Vertical pin for drying tubes.

2.137 Test Tubes

Set of	(2)	
Glass	Borosilicate	
Capacity	(10)ml	(25) ml
Length × OD	(125×15)mm	(150×18)mm
Wall thickness	(1.8) mm	
Pack quantity	(100)	
Notes	Heavy wall.	
	Strong resistance to heat and chemicals.	
	Round or flat bottom with rim.	

2.138 Triangle

Pack of	(10)
	Iron galvanized wire
Material	Clay Pipe system
	Thick Iron wire length of side (75) mm approx.
length	clay pipe length (35) mm approx.

2.139 Triangular stand

Length of inside	(125) mm approx.
Legs height	(200) mm approx.
	Cast iron top with steel legs.
Shape & material	Finished in black color.
	With splayed legs.

2.140 Tubing connector T shape

Glass	Borosilicate
Notes	(T) shape
	Three ways.
	Riffled end for rubber tubing (8) mm outside dia.

2.141 Tubing connector Y shape

Glass	Borosilicate
Notes	(Y) shape
	Three ways.
	Riffled end for rubber tubing (8) mm outside dia.

2.142 Universal Indicator Paper

Packing	(5m) reel
Change color	The color changes across PH – range (1- 14)
Container	Sealed in Plastic bag

2.143 Vertical Pipette stand

Material	High density Polypropylene.
Notes	Hold (28) pipettes vertically.
	Base dia 22cm approx. rod length 35cm approx.
	Non corrosive and unbreakable.

2.144 Volumetric flask 100ml

Glass	Borosilicate.
Notes	With ceramic graduation in the top.
	Fitted with chemical resistance stopper.

2.145 Volumetric flask 250ml

Glass	Borosilicate.
Notes	With ceramic graduation in the top.
	Fitted with chemical resistance stopper.

2.146 Volumetric flask 500ml

Glass	Borosilicate.
Notes	With ceramic graduation in the top.
	Fitted with chemical resistance stopper.

2.147 Volumetric flask 50ml

Glass	Borosilicate.
Notes	With ceramic graduation in the top.
	Fitted with chemical resistance stopper.

2.148 Washing bottles 250ml

Material	Translucent.
	Unbreakable Polythene
Supplied with	Cap

2.149 Washing bottles 250ml

Material	Translucent.
	Unbreakable Polythene
Supplied with	Cap

2.150 Water Still

Material	Clear borosilicate glass boiler or stales steel	
	Condenser pipe.	
Out put	Distilled water	4 litter / hr.
	/hour	
Water supply	Minimum flow rate	litter /min.
Minimum pressure	(3) psi.	
pH	(5.5)-(6.0)	
Safety	A built in thermostat in the heater protects the unit in case of water supply failure and automatically rests when the still has cooled.	
	Suitable base made of hard metal, can be fitted on bench and wall.	
Operating voltage	(220) V/(50 -60)Hz AC.	
Supplied with	An on – off switch with indicator.	
	Services manual in Arabic and English language, maintenance drawing. Arabic Translation should be provided	
	Delivery installation and training at schools.	

2.151 Zinc Metal

Molecular Formula	Zn
Packing	(500)gr
Assay	90%
Physical State	Solid
Appearance	blueish-white Granulated
Container	Sealed in Plastic bottle

2.152 Zinc Nitrate Hexahydrate

Molecular Formula	Zn(NO3)2.6H2O
Packing	(500)gr
Assay	(99)%
Physical State	Solid
Appearance	Colorless crystals
Container	Sealed in Plastic bottle

2.153**Zinc Oxide**

Molecular Formula	ZnO
Packing	(100)gr
Assay	(99)%
Physical State	Solid
Appearance	White powder
Container	Sealed in Plastic bottle

3. List of Biology Lab Material and Equipment

3.1	Aceto carmine. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	100ml	Bottle
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3.2	Aceto carmine. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	100ml	Bottle
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3.3	Acetone <i>Dates of production and expiry must be stated on the label of the bottle.</i>	<u>(500)ml</u> <u>(99.8%)</u>	Bottle
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3.4	Benedict's Solution. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(1000) ml	Bottle
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Item No: 3.5 Item Name: Binocular Compound Microscope

Component & Specification		
Eye pieces	(10)× W.F or (15)× W.F	
	Eye pieces pointer.	
Tube	Long.	Not less than 160 mm.
	Inclined.	30° - 45°.
	Rotatable.	Not less than 360°
Objectives	(4 ×), (10 ×), (40 ×) or (60 ×), and (100 ×) oil lens.	
Quadruple	Quadruple revolving nose piece with click stop.	
Stage	(120×120) mm approx.	
	Built-in graduated coaxial knob mechanical stage.	
Numerical apertures	N.A (1.25) condenser with iris diaphragm and filter holder.	
Illumination/ power supply	Should be through built - in transformer.	
	(10-25)W/ (6) V illuminator.	
	To be operated from (220 - 240 V / 50 Hz).	
Others	Course and fine adjustment knobs.	
	Strong wooden or aluminium box, with lock and key.	
	Vinyl dust cover.	
	Oil immersion (10) ml.	
	Two spare lamps (10 - 25) W at least.	
	Manual included.	
	Metal base and reagent resistant finish	
Note	Sample may be required.	

3.6	Bromothymol Blue <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(10) gm	Bottle
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3.7	Canada Balsam. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(25) ml, (D:0.99)	Bottle
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Item No:	3.8	Item Name:	CARIOUS TOOTH MODEL
Component & Specification			
Material	Unbreakable plastic.		
Size	Enlarged (14-15) times.		
No. of parts	(6) parts		
Components	Colored model.		
	Model of the molar.		
	The model illustrates the developments of dental carious.		
	The model is mounted on suitable base.		
	Vinyl dust cover.		
Note	Descriptive key both in Arabic and English language.		
	Sample may be required		

Item No:	3.9	Item Name:	CENTRIFUGE
Component & Specification			
Material	Made of steel body for safety.		
Unit	Apparatus.		
Dimensions	(215× 360× 440) mm approx.		
No. of tube	At least (4) tubes.		
Tube capacity	≥15 ml (length 100mm X 16mm dia.)approx		
Safety measures	The rotor can only be energized when the lid is correctly closed and locked		
Component	Viewing window in the lid enables the rotor motion to be observed.		
	adapter for other tubes size preferred		
	Sling out rotor complete with removable buckets.		
	Timer with bell tone alarm when stop moving.		
Speed Range	(3000- 4000) r.p.m		
Note	Operated from (220-240) V/(50) Hz.		
	Sample may required.		
	Vinyl dust cover.		

3.10	Crystal violet. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(25 ml), (D:0.808)	Bottle
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Item No:	3.11	Item Name:	D N A Model
Component & Specification			
Material	Unbreakable plastic.		
	Dissectible.		
Size	H: (60-70) cm approximately.		
Dimension	(3) Dimension.		
No. of pairs	(12) Pairs are colored and marked with identifying letters and shape with different size.		
components	Two flexible strands that represent alternating ribose and phosphate units join the ends of the base.		
	Vinyl dust cover.		
	Descriptive key both in Arabic and English language.		
	The model is mounted on suitable base.		
Note	Sample may be required.		

Item No:	3.12	Item Name:	Digital Microscope	
Component & Specification				
Binocular				
Data cable type		USB		
Power supply		Powered from computer USB		
Camera				
magnify Ratio		Magnification from	(20X) to (1500X)	
Resolution of picture		Effective pixels	≥ 2048 × 1536	
		(3-5) mega pix I camera built into microscope.		
All drivers needed and Application software		Software support Englis language, Arabic language prefers.		
		Compatible with operating system (windows 2000,windows.xp and above)		
		Manipulate images with painting tools.		
		Still Images can be captured and saved as either (jpeg, bmp or mig) files.		
		Captures moving images and save it as (AVI,MPEG) files		
Component		CD Adventures with a Microscope, user manual, all cables needed collection of samples.		
		Strong aluminum box, with lock and key, and vinyl dust cover.		
		at least two spare lamps (10 -30 W), and (10 ml) immersion oil lenses.		
Tube		(30°) -(45°) inclined.		
Stage		Built-in graduated coaxial knob mechanical stag .		
Nose pieces		Quadruple revolving nosepiece, with click stop.		
Eyepieces		WF (5X)or (10X)or(15 X)		
Objectives		Achromatic (4x, 10x, 40x or 60x) & (100x).		
Condenser		Focusable (1.25) condenser with iris diaphragm and filter holder with blue filter.		
Illumination / Power supply		Should be through built-in transformer: 12 v/ (10-30) . halogen Koehler illumination with step less intensity control to be operated from (220-240 V/ 50 Hz).		
Warranty		(3) Year		
		Maintenance and installation of camera. in schools.		
		Training for at least (2) trainers in each school		
Note		(Sample may required)		
		Vinyl dust cover		

Item No: 3.13 **Item Name:** **DISSECTING SET**

Component & Specification			
Material OF the component	Made of stainless steel		
Component	Suitable case		
	One Forceps.	(100) mm approx	
		Straight.	
		Fine point.	
	One Forceps	(100) mm approx	
		Straight.	
		Blunt tip.	
	One Forceps	(100) mm approx	
		Curved.	
		Fine point.	

	Two Needles	In metal handle. handle length (95) mm.
	One Needle	(35)mm approx. Straight.
	One Scalpel	Blade length (38) mm approx. With ten spare blades.
	One Scalpel	Blade length (45) mm approx. With ten spare blades.
	One Scissors	(100)mm approx. Straight. Fine point.
	One Scissors	(100)mm approx. Curved. Fine point.
	One Scissors	(150)mm approx. Straight. Fine point.
	One Magnifier	(10 X), With handle.
	One Seeker	In metal handle. Stainless steel. Over length. (130) mm approx.
	One Section lifter	Overall length (150) mm approx... Stainless steel .
	One Full spear dissecting needle	All stainless steel. (140) mm length approx...
	One Hooks and chains.	
	One Section cutting razor	Stainless steel. With blade. Hollow ground on one. Surface and flat ground on the other. blade length (75) mm approx.
	Loop and Loop holder	Loop and Loop holder: (50) mm (Nicrom wire), Aluminum handles with chuck to take inoculating wires and loops. Lockable by a screw collar, Length of holder (150) mm approx..
	Note	Sample may be required
	unit	set

Item No: **3.14** Item Name: Dissecting dish

Component & Specification	
Material	Made of stainless steel with wide lip (edge)
Component	Contains. thick layer of slandered black wax(1.25 cm)thickness
Dimension(L× W× D)	(400 × 300 × 70) mm approx.
unit	dish

3.15	Eosin stain, bottle. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(100)gm	Bottle
3.16	Fructose <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(100) gm	Bottle
3.17	Giemsa stain <i>Dates of production and expiry must be stated on the label of the bottle.</i>	10 ml	Bottle
3.18	Glucose, powder. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(500) gm	Bottle
3.19	Grams Iodine. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	100ml	Bottle

Item No:	3.20	Item Name:	Human Brain Model
Component & Specification			
Material	Unbreakable plastic.		
	Dissectible parts		
Size	Life size for adult.		
No. of parts	Dissected into four parts.		
Components	Model showing all the details of human brain cerebrum, cerebellum, brain stem and blood vessels.		
	The model is mounted on suitable base.		
	Vinyl dust cover.		
	Descriptive key both in Arabic and English language.		
Note	Sample may be required		

Item No: 3.21 Item Name: Human Ear Model

Component & Specification	
Material	Unbreakable plastic.
	Dissectible parts.
Size	Enlarged three times approximately
No. of parts	(6) parts.
Dimension	Parts are (4-5) times actual size
Components	All parts of the ear are shown, includes the external ear (pinna and tympanum),the middle ear(malleus Incus and stapes)and Internal ear represented by cochlea and the semicircular canals.
	The model is mounted on suitable base.
	Vinyl dust cover.
	Descriptive key both in Arabic and English language.
Note	Sample may be required

Item No: 3.22 Item Name: Human Eye Model

Component & Specification	
Material	The lens and the vitreous humor is made of clear plastic
	Other parts are made of unbreakable vinyl plastic.
	Dissectible parts.
Size	Enlarged (5-7)times..
No. of parts	The model separate into (7) parts.
Components	The model includes the eyeball with optic nerves, detachable parts include the cornea, iris, lens and vitreous body rectus bulbi, levator palpebrae superioris muscle togrthor with the lacrimal gland, eyeball with extra ocular muscles.
	The model is mounted on suitable base.
	Vinyl dust cover.
	Descriptive key both in Arabic and English language.
Note	Sample may be required

Item No: 3.23 Item Name: Human Heart Model

Component & Specification	
Material	Unbreakable vinyl plastic.
	Dissectible.
Size	Enlarged (2-4) times approximately.
No. of parts	At least Two parts.
Components	Arteries painted red and veins blue.
	External view shows all blood vessels entering and leaving the heart and blood supply on the heart muscles.
	The muscular walls and the valves of the heart are clear shown.
	Features are numbered.
	The model is mounted on suitable base.
	Vinyl dust cover.
	Descriptive key both in Arabic and English language.
Note	Sample may be required

Item No: 3.24 Item Name: Human Kidney Model

Component & Specification	
Material	Unbreakable plastic.
	Dissectible.
Size	Enlarged at least (2-3) times .
No. of parts	Dissected into two parts.
Components	Shows all the anatomical features of the cortex, medulla and the renal blood vessels.
	Consist of pyramids with papillae, partially open renal pelvis and ureter
	The model is mounted on suitable base.
	Vinyl dust cover
	Descriptive key both in Arabic and English language.
Note	Sample may required

Item	3.25	Item	Human Skeleton Model
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No: Name:	
Component & Specification	
Material	Unbreakable solid plastic. Skull can be dissected
Size	Full size
No. of parts	Skull can be removed.
Dimension	Height (170) cm or more.
Components	The main joints are articulated. The skeleton model is mounted on metal stand with wheeled base (4-5) wheels Vinyl dust cover. Descriptive key both in Arabic and English language
Note	Sample may required

Item No: **3.26** Item Name: **Human Torso Model**

Component & Specification	
Material	Unbreakable plastic. Dissectible.
Size	Natural life size.
No. of parts	(16) parts at least .
	Open – back torsos. Removable organs includes : The head is opened to show half of brain (the removable head is dissected to show internal details of : nose, mouth ,one eye with optic nerve trachea , aorta with esophagus two - part lungs heart stomach pancreas with spleen liver with gallbladder, small and large intestine, half of a kidney And the front of the bladder. The back is open from the cerebellum to the sacrum, and the seventh thoracic vertebra is removable. Interchangeable of male and female reproductive systems. The model is mounted on suitable base. Vinyl dust cover. Descriptive key both in Arabic and English language.
Note	Sample may be required

Item No: **3.27** Item Name: **INCUBATOR**

Component & Specification	
Material	
Outer body	Constructed from sheet steel finished with an easy clean powder paint.
Inner body	Chamber is made from mild steel coated aluminium and supplied with non tip shelf runners.
Dimensions for inner chamber	(300 × 300 × 300) mm approx or more
Component	Direct easy read thermostat.
	Plexiglas's window for easy in viewing contents.
	Two removable shelves (chrome plated).
	Heating cycle indicated by pilot lamp.
	Double wall, Door with double glass window for observation in the chamber
Temperature range	5 above ambient temperature to 60 C
Usage	Ideal for laboratory uses as egg incubator histology slides
Note	Operated on (220-240 V/ 50 Hz..
	Sample may required.
	Vinyl dust cover.

3.28	Indophenol <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(100) ml	Bottle
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Item No: **3.29** Item Name: **Insect net**

Component & Specification	
Material	Made from knitted polyester.
	With steel hoop (ring).
Aperture size	≤1.0mm approx.
Max. dia of the net	(300) – (500)mm
Material of andel	Made from wooden or aluminum.
Handel leng h	≥1.0)m.
Weight	(0.5) kg. approx.
NOTE	Prefer With Vinyl dust cover

3.30	Iodine. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	100 gm	Bottle
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Item No: **3.31** Item Name: **Leaf , TRANSVERSE SECTION Model**

Component & Specification	
Material	Unbreakable plastic.
Size	Enlarged(300×.)or more
Components	Colored model.
	Showing the details of the dicotyledon structure include dorsal and ventral page, xylem, phloem, and mesophyll.
	Show the lower surface of leaf with stomata
	The model is mounted on suitable base.

	Vinyl dust cover.
	Descriptive key both in Arabic and English language.
Note	Sample may be required

3.32	Lugol's solution <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(100) ml (D: 1.007)	Bottle
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3.33	Methyl cellulose. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	50 gm	Bottle
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3.34	Methyl Orange. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(25) gm	Bottle
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3.35	Methylen Blue stain, (Dry.) <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(5) gm	Bottle
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Item No: **3.36** Item Name: **Microscope Slides box**

Component & Specification	
Material	Made of soft wood.
Components	Hinged lid.
	Index inside the lid.
	Slide is held in number slot.
Capacity	(50) slide ,prefer in two rows.

Item No: **3.37** Item Name: **Microscope slides**

Component & Specification	
Material	Made of glass
Dimension	(75 × 25) mm approx
Thickness	(1-1.5) mm approx.
Note	Polished edges,
Pack of	(50) Slides.

Item No: **3.38** Item Name: **MONO COTYLEDON ROOT MODEL**

Component & Specification	
Material	Unbreakable plastic.
Size	Enlarged (400×.)or more
Components	Colored model.
	Showing all the details of cross section.
	The model is mounted on suitable base.
	Vinyl dust cover.
	Descriptive key both in Arabic and English language.
Note	Sample may be required

Item No: **3.39** Item Name: **Monocotyledon Stem Model**

Component & Specification	
Material	Unbreakable plastic.
Size	Enlarged (500×.) or more
Components	Colored model.
	Shows the detail of the cross section stem .
	Show cuticle layer and epidermis .
	Details of closed vascular bundles.
	The model is mounted on suitable base.
	Vinyl dust cover.
Note	Descriptive key both in Arabic and English language.
	Sample may be required

3.40	Nutrient Agar Powder. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(1000) gm	Bottle
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3.41	Pepsin. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(5) gm	Bottle
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Item No: 4.42 Item Name: Petri Dishes

Component & Specification	
Material	Made of borosilicate.
Features	The top and bottom are marked in different marking.
	Autoclavable (wet and dry)
Dimension	(90×15) mm approx.
Pack of	(12).
Note	Prefer With Rack: clear acrylic with white polycarbonate posts.

3.43	Phenolphthalein. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	100 gm	Bottle
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Item No: 3.44 Item Name: Prepared Slides for Microscope

Component & Specification	
Number of slides	123 slide (see list of Good and Delivery schedule)
Note	Suitable wooden or hard plastic box
	Key in Arabic and English language.
	<i>of one of each the following:</i>
	<ol style="list-style-type: none"> 1. <i>Bacteria Cocci</i> 2. <i>Bacteria Bacillus</i> 3. <i>Bacteria Spirillum</i> 4. <i>Mitosis Root Tip of Onion (Allium cepa).</i> 5. <i>Meiosis</i> 6. <i>Chlamydomonas</i> 7. <i>Alga Ulva</i> 8. <i>Shield, Fern leaf with Sporangia</i> 9. <i>Pinus, Ovule with archegonia</i> 10. <i>Pinus, Anther .</i>

11. *Pinus, Ripe Pollen.*
12. *Pinus, Leaf .*
13. *Pollen grain for different plants.*
14. *Dicotyledon Root .*
15. *Monocotyledon Root.*
16. *Dicotyledon Stem.*
17. *Monocotyledon Stem.*
18. *Dicotyledon Leaf.*
19. *Monocotyledon Leaf.*
20. *Simple Squamous Epithelium Tissue*
21. *Simple Cubical Epithelium Tissue .*
22. *Simple Columnar Epithelium Tissue*
23. *Ciliated Epithelium Tissue*
24. *Pseudostriated Ciliated Columnar EpitheliumTissue*
25. *Striated Squamous Epithelium Tissue.*
26. *Thyroid and Parathyroid glands.*
27. *Small Intestine.*
28. *Trachea.*
29. *Esophagus.*
30. *Human, Skin with Hair and Sweat Gland.*
31. *Human, Blood Smear*
32. *Human, Artery .*
33. *Human, Vein.*
34. *Human, Nerve.*
35. *Human, Lung .*
36. *Human, Salivary Gland.*
37. *Human, Muscle Tissue, Cardiac.*
38. *Human, Muscle Tissue, Non – Striated*
39. *Human, Muscle Tissue, Striated*
40. *Human, Bone Tissue.*
41. *Human, Cartilage Tissue, Hyaline .*
42. *Human, Cartilage Tissue, Yellow Elastic.*
43. *Human, Cartilage Tissue, White Fibrous.*
44. *Human, Adipose Tissue*
45. *Human, Spermatozoa, Smear*
46. *Human, Testicle .*
47. *Human, Ovary .*
48. *Human, kidney.*
49. *Human, Brain .*
50. *Flower, Anther Cell*
51. *Flower, Ovary Cell.*
52. *Protozoa Amoebae.*
53. *Euglena Viridis*
54. *Myxomycete (Slime Molds)*
55. *Sponge.*
56. *Synapses, Spinal Cord*
57. *Hydra Nerve Net*
58. *Hydra, Budding*
59. *Hydra.*
60. *Planaria.*
61. *Planaria.*
62. *Taenia, Head and Neck (Tapeworm)*
63. *Taenia, Mature Proglottid*
64. *Taenia, Immature Proglottid*
65. *Taenia, Cyst (Tapeworm)*
66. *Ascaris, female and male .*
67. *Ascaris, Ova .*

68. *Lumbricus*; intestinal region (Earth Worm)
69. *Enterobius vermicularis*, male (Pin worm)
70. *Enterobius vermicularis*, female (Pin worm)
71. *Funaria* (Hair Moss) .
72. *Funaria* (Hair Moss) Sporangium.
73. *Funaria* (Hair Moss) Protonema
74. *Trypanosoma Gambienses*, in blood
75. Mitochondria
76. *Paramecium caudatum*, staining
77. *Paramecium*, in binary fission
78. *Paramecium*, in conjugation
79. *Pancillium*, stained
80. *Rhizopus spigricans*, with Sporangia
81. Parenchyma Tissue.
82. Sclerenchyma Tissue.
83. Collenchyma Tissue.
84. *Volvox*, with daughter colonies
85. *Spirogyra*, Conjugation
86. Human Red Blood Cells
87. Human White Blood Cells.
88. Fungi Yeast budding
89. *Oscillatoria*.
90. *Nostoc* ,filaments with heterocysts
91. Bacteria, in binary fission
92. Bacteria, in conjugation
93. White Fibrous Connective Tissue.
94. Yellow Elastic Connective Tissue.
95. Human ,Nerve Cell .
96. Medulla Oblongata.
97. Human, Liver Section
98. Lymph Node.
99. Human Spleen.
100. Renal Gland , (cortex and medulla)
101. Pituitary Gland, Section
102. Human Stomach, Section
103. Human Colon.
104. Human Pancreas.
105. Human Eye Retina, Section
106. Cochlea, Section
107. Human Chromosomes, Normal male
108. Human Chromosomes, Normal female
109. Chloroplasts
110. Golgi Bodies
111. Spider, head showing mouth parts
112. Mites
113. Locust
114. *Drosophila Melanogaster*
115. *Anopheles*, male mouth parts
116. *Anopheles*, female mouth parts
117. Human, Body Louse
118. Human Flea
119. *Elodea canadensis* Leaf.
120. *Elodea canadensis* Stem
121. *Plasmodium malaria* in blood smear
122. Seminal fluid smears.
123. Diatoms.

Item No: 3.45 Item Name: Prepared Slides for Projector

Component & Specification	
Number of slides	85 slide (see list of Good and Delivery schedule)
Note	Suitable case
	frame of slide: - plastic -can be removed easily -fixed again easily
	<p>Key in Arabic and English language. of one of each of the following:</p> <ol style="list-style-type: none"> 1. <i>The Nitrogen cycle in the nature.</i> 2. <i>The Carbon cycle in the nature.</i> 3. <i>The Oxygen cycle in the nature.</i> 4. <i>Compare between Mitosis and Meiosis.</i> 5. <i>Meiosis.</i> 6. <i>The Life Cycle of Fern.</i> 7. <i>The Life Cycle of Funaria.</i> 8. <i>The Division Stage in animal cells(mitosis)</i> 9. <i>The Connective & Epithelium Tissues.</i> 10. <i>The Sperm & Ovary in Human, and Stages of Formation.</i> 11. <i>The Flower Structure & It's Life Cycle.</i> 12. <i>The Human Skeleton.</i> 13. <i>The Human Nervous System.</i> 14. <i>The Human Digestive System.</i> 15. <i>The Human Blood Circulation & Heart Structure.</i> 16. <i>The Blood Contents & It's Ratio.</i> 17. <i>The Human Lymphatic System.</i> 18. <i>The Human Respiratory System.</i> 19. <i>The Human Urinary System.</i> 20. <i>Section in Human Skin "with Hair and sweat gland".</i> 21. <i>The Animal Cell & It's Structure.</i> 22. <i>The Plant Cell & It's Structure.</i> 23. <i>The Non - Light Reactions (Shows The Calvin Cycle).</i> 24. <i>The Productions of Photosynthesis.</i> 25. <i>The Kreb's Cycle.</i> 26. <i>The Relation Between The Respiration & Photosynthesis.</i> 27. <i>The Human Eye Structure.</i> 28. <i>The Human Ear Structure.</i> 29. <i>The Human Nose Structure.</i> 30. <i>The Human Mouth Structure.</i> 31. <i>The Life Cycle of Ascaris.</i> 32. <i>Dicotyledon and Monocotyledon of the root.</i> 33. <i>The Life Cycle of Cow worm "The Tape worm".</i> 34. <i>The Life Cycle of the Bread Fungus.</i> 35. <i>The Life Cycle of Plasmodium Malaria.</i> 36. <i>The Sexual Reproduction of Paramecium.</i> 37. <i>The Life Cycle of Myxomycete (Slime Molds).</i> 38. <i>The structure of blood vessels.</i> 39. <i>The Life Cycle of Chlamydomonas</i> 40. <i>The structure of small Intestine.</i> 41. <i>The Metabolism Processes in The Living Organisms.</i> 42. <i>The Secretion Action of Adrenal Gland Hormones.</i> 43. <i>The Action of Hormones and steroid hormones</i>

	44. <i>Regulation of Glucose Level in the Blood.</i> 45. <i>Regulation of Calcium Level in the Blood.</i> 46. <i>The Life Cycle of Sea Lattuce.</i> 47. <i>The Life Cycle of Laminaria algae.</i> 48. <i>The Life Cycle of Rhodophyta.</i> 49. <i>The Life Cycle of Pinus Plant.</i> 50. <i>The Human Muscular System.</i> 51. <i>The Pregnancy Stages in the Human.</i> 52. <i>The Flower Structure.</i> 53. <i>The DNA Structure.</i> 54. <i>The Compound Microscope & Stereomicroscope.</i> 55. <i>Cross Section in Spinal Cord.</i> 56. <i>Cross Section in Bone.</i> 57. <i>Longitudinal Section in Bone.</i> 58. <i>The Different Kinds of Articulation Joints.</i> 59. <i>Arteries and venous in human body.</i> 60. <i>The Muscular Tissues: Smooth, Striated and Cardiac</i> 61. <i>The Female Reproductive System (In Human).</i> 62. <i>The Endocrine Glands in Human Body.</i> 63. <i>Blood Clotting.</i> 64. <i>Living constituent of ecosystem.</i> 65. <i>Liver, Gallbladder, Pancreas.</i> 66. <i>The Life Cycle of Flower Plants.</i> 67. <i>The Water Cycle in the Nature.</i> 68. <i>The Epithelium Tissues.</i> 69. <i>The Muscles in Human.</i> 70. <i>Translation of protein.</i> 71. <i>The structure of cellular membrane (plasma membrane)</i> 72. <i>The sodium potassium pump.</i> 73. <i>Transmission of Nerve Impulse in the Synapse (Human).</i> 74. <i>Frog life cycle</i> 75. <i>Menstrual cycle</i> 76. <i>Shape of viruses</i> 77. <i>Fasciola hepatica life cycle (sheep liver fluke)</i> 78. <i>Five kingdoms(inter connected the relationships among earth's organisms)</i> 79. <i>ATP structure</i> 80. <i>Fermentation</i> 81. <i>Structure of the earth worm</i> 82. <i>Phloem & xylem.</i> 83. <i>Lymphocytes</i> 84. <i>Thyroid gland & feed back inhibition</i> 85. <i>The male reproductive system (in human)</i>
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3.46	Ringer's solution. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	1 liter	Bottle
3.47	Safranine stain, bottle <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(100) gm	Bottle

Item No: 3.48 Item Name: Section of Dicotyledonous Root Model

Component & Specification	
Material	Unbreakable plastic.
Size	Enlarged (300×.) or more
Components	Colored model.
	Showing all the details of dicot root section.
	Show root hair.
	The model is mounted on suitable base.
	Vinyl dust cover.
	Descriptive key both in Arabic and English language.
Note	Sample may be required

Item No: 3.49 Item Name: Section of Dicotyledonous Stem Model

Component & Specification	
Material	Unbreakable plastic.
Size	Enlarged (350x or more.)
components	Colored model.
	Showing a transverse, radial and tangential section.
	Show epidermis ,cork layer ,xylem, phloem and cambium pith.
	The model is mounted on suitable base.
	Vinyl dust cover.
	Descriptive key both in Arabic and English language.
Note	Sample may be required

Item No: 3.50 Item Name: Slide cover (cover glasses)

Component & Specification	
Material	Resistant glass
Thickness	(0.15) mm
Dimension	(20 × 20) mm approx.
No. of pcs.	(100) cover
Unit	Pack
Note	Pre-cleaned

Item No: 3.51 Item Name: Slide Projector

Component & Specification		
Component	A magazine loading.	
	Remote control for focusing.	
	Edit gate and adjustable front feet are also fitted.	
	DIN socket is provided for tape/slide synchronization from a suitable equipped tape player.	
Illumination	(25)V/ (250) W halogen lamp.	
Projection lens	f (2.8, 90) mm focal length . (750) lumens.	
Cooling	Radial turbo fan.	
Image size	Image size from (35) mm transparency	(1.0 × 1.0) m at (2.0)m from screen
		(0.7 × 0.7) m at (1.5) m from screen.
Circuit protection	built-in triac fuses (2× 1.25) A	

Dimension(H × W × D)	(115 × 255 × 300) mm approx.
Slide magazine	Straight, (40) slides.
Main voltage	(220 – 240) v/ (50) Hz.
Mass	(4)k.g approx.
Others	Vinyl dust cover.
	Descriptive key both in Arabic and English language.
	Sample may required
Warranty	(3)year

Item No: 3.52 **Item Name:** Sphygmomanometer

Component & Specification	
Type	Aneroid type
Usage	For measuring blood pressure respiration and heart function studies.
Components	Compact aneroid pressure gauge instead of a mercury manometer.
	The occluding cuff is enclosed in a stout cloth sleeve with wide Velcro strips to secure the cuff around the arm.
	The gauge and inflating bulb are incorporated in one unit with the captive air bleed screw.
Scale size	(25)mm or more diameter .
Scale reading	From(0- 300) Hg
Cuff	(500 ×140) mm or more suitable for adults. (L ×W).
	Self-coiling connecting tubing (300)mm .or more
Note	Supplied in a suitable case
	Sample may required

Item No: 3.53 **Item Name:** Stereo microscope

Component & Specification	
	(binocular)
Eye pieces	(10 X) to (20 X).
	Eye pieces (pair) are locked in place with small grub screw and cannot be lost or accidentally fall out.
	The interpupillary distance is adjusted between (55) and (75) mm.
	The left eye tube has a separate focusing collar.
Ocular tube	Stand stable design with binocular head inclined at (45°).
	Head can be rotated through (360°).
	Locked in any position using thumb screw.
Objectives	(2 X), (4 X), wide field.
Illumination/ power supply	Built-in illuminator (6) V power supply.
	Transformer to be operated from (220-240 V/ 50 Hz).
Lamp	Two lamps are fitted to provide both transmitted and incident illuminator (10-25W).
	One lamp is located directly turn angled down to the stage plate.
	The lamps can be switched on separately.
Stage	Transparent stage plate.
Others	Course and fine adjustment knobs.
	Strong wooden or aluminium box, with lock and key.
	Vinyl dust cover.

	Manual included.
	Metal base and reagent resistant finish.
	The microscope base is fitted with two stage clips.
	Sample may be required

Item No: 3.54 Item Name: Stethoscope

Component & Specification		
Usage	Possible to monitor heart beat and respiratory movements.	
Ear pieces	Metal and fitted with plastic ear plug	
Chest piece	Dual	Larger side (47 mm diameter apprx).
	Purpose	While the small one (30 mm dim apprx.) is for listening to the pulse in the arm.
Note	Sample may be required.	

3.55	Sucrose. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(250)gm	Bottle
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3.56	Wright's Blood stain. <i>Dates of production and expiry must be stated on the label of the bottle.</i>	(50) gm	Bottle
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4. List of Geology Lab Material and Equipment

Item No: 4.1 Item Name: Basic rock collection

Component & Specification	
Kit component	(10) Numbered /rock Samples; granite, rhyolite, sandstone, limestone, basalt, gabbro, marble, Coquina, chalk & shale.
Packing	box made of plastic or wood with Smooth and safe edges
Purity	All Samples show typical feature.
size	Size about (7.5 ×10 cm) approx.
legend & user guide	ID numbers for each sample installed on the samples it selves. The user guide is installed on the box and indicate the number of the sample and its name in both Arabic and English

Item No: 4.2 Item Name: A mineral set of Hardness

Component & Specification	
Kit component	(9) Numbered Samples; Talc, Gypsum, Calcite, Fluorite, Apatite, Orthoclase, Quartz, Topaz, and Corundum. With streak plate (2.5 cm x 2.5 cm), magnet, glass slide & copper strip.
Packing	box made of plastic or wood with Smooth and safe edges
Purity	All Samples are pure crystalline
Size	Size about (2.5 cm x 2.5 cm) approx.
legend & user guide	ID numbers for each sample installed on the samples it selves. The user guide is installed on the box and indicate the number of the sample and its name in both Arabic and English

Item No: 4.3 Item Name: A mineral set for color & Streak

Component & Specification	
Kit component	(10) Numbered Samples; Azurite, Malachite, Olivine, Sulfur, Biotite, Limonite, Hematite, Magnetite, Graphite and Pyrite. With white streak plate (5 cm x5 cm) approx.
Packing	box made of plastic or wood with Smooth and safe edges
Purity	All Samples are pure crystalline (based on available Jordanian Resources)
size	Size about (5x5 cm.)
legend & user guide	ID numbers for each sample installed on the samples it selves. The user guide is installed on the box and indicate the number of the sample and its name in both Arabic and English

Item No: 4.4 Item Name: A mineral set for cleavage

Component & Specification	
Kit component	(7) numbered Samples; Gypsum, Calcite, Halite, Biotite, Muscovite, fluorite, Galena
Packing	box made of plastic or wood with Smooth and safe edges
Purity	All Samples are pure crystalline and show typical set of cleavage for each
size	Size about (5cm×5 cm) approx.
legend & user guide	ID numbers for each sample installed on the samples it selves. The user guide is installed on the box and indicate the number of the sample and its name in both Arabic and English

Item No: 4.5 Item Name: A mineral set for Specific Gravity and Luster

Component & Specification	
Kit component	(8) numbered Samples; Pyrite, Orthoclase, Pyroxene, Galina , Barite, Zircon, Plagioclase, Magnetite
Packing	box made of plastic or wood with Smooth and safe edges
Purity	All Samples are pure crystalline
size	Size about (5cm×5 cm) approx.
legend & user guide	ID numbers for each sample installed on the samples it selves. The user guide is installed on the box and indicate the number of the sample and its name in both Arabic and English

Item No: 4.6 Item Name: A set Of Igneous rock texture

Component & Specification	
Kit component	(6) numbered Samples <ol style="list-style-type: none"> 1. Glassy Texture (Obsidian) 2. Aphanetic Texture (Basalt) 3. Porphyritic Texture (Rhyolite or Andisite) 4. Phaneritic Texture (Granite) 5. Vesicular Texture (Pumice or Scoria) 6. Pyroclastic volcanic Texture
Packing	box made of plastic or wood with Smooth and safe edges
Purity	All Samples Show Typical texture
Size	Size about (7.5 cm ×10cm) approx.
legend & user guide	ID numbers for each sample installed on the samples it selves. The user guide is installed on the box and indicate the number of the sample and its name in both Arabic and English

Item No: 4.7 Item Name: Jordanian industry Rocks and ore minerals

Component & Specification	
Kit component	include (10) numbered Pure and typical samples as the following: Glass sand (250g), Kaolinite, Limestone, Oil shale, Copper ore, Phosphate, potassium Salt, Jordanian Marble, Travertine & Gypsum
Packing	box made of plastic or wood with Smooth and safe edges, glass sand sample in transperence plastic container within the package
Purity	All Samples Show Typical Features
size	Size about (7.5 cm ×10cm)approx.
legend & user guide	ID numbers for each sample installed on the samples it selves. The user guide is installed on the box and indicate the number of the sample and its name in both Arabic and English

Item No: 4.8 Item Name: A set of Igneous Rocks:

Component & Specification	
Kit component	include (7) rocks numbered samples as the following; Conglomerate, breccia, Sandstone, Silt stone, Mudstone., Shale, marl
Packing	box made of plastic or wood with Smooth and safe edges
Purity	All Samples Show Typical Features
Size	Size about (7.5cm×10cm) approx.
legend & user guide	ID numbers for each sample installed on the samples it selves. The user guide is installed on the box and indicate the number of the sample and its name in both Arabic and English

Item No: 4.9 Item Name: A Set of clastic Sedimentary Rocks

Component & Specification	
Kit component	include (7) rocks numbered samples as the following; Conglomerate, breccia, Sandstone, Silt stone, Mudstone., Shale, marl
Packing	box made of plastic or wood with Smooth and safe edges
Purity	All Samples Show Typical Features
Size	Size about (7.5cm×10cm) approx.
legend & user guide	ID numbers for each sample installed on the samples it selves. The user guide is installed on the box and indicate the number of the sample and its name in both Arabic and English

Item No: 4.10 Item Name: A Set of Chemical and Biological Sedimentary Rocks

Component & Specification	
Kit component	Includes (11) rocks numbered samples as the following : limestone, Dolomite , Travertine (spongy rock) , White – colorless massive salt rocks , Gypsum, Coquina, Chalk, Chert , Coal rock, Phosphate
Packing	box made of plastic or wood with Smooth and safe edges
Purity	All Samples Show Typical Features
size	Size about (7.5cm×10cm) approx
legend & user guide	ID numbers for each sample installed on the samples it selves. The user guide is installed on the box and indicate the number of the sample and its name in both Arabic and English

Item No: 4.11 Item Name: A Set of Metamorphic Rocks

Component & Specification	
Kit component	Includes (6) rocks numbered samples as the following <ol style="list-style-type: none"> 1. Slate: well- foliated 2. Phyllite: well- foliated 3. Schist: well foliated, coarse grained 4. Gneiss: well banded 5. White marble: pure calcite 6. Quartzite: pink, tightly cemented, medium quartz grains
Packing	box made of plastic or wood with Smooth and safe edges
Purity	All Samples Show Typical Features
Size	Size about (7.5cm×10cm) approx.
legend & user guide	ID numbers for each sample installed on the samples it selves. The user guide is installed on the box and indicate the number of the sample and its name in both Arabic and English

Item No: 4.12 Item Name: Fossil for Record life

Component & Specification	
Kit component	(8) Different Actual numbered fossil specimens set in collection include Ammonites, trilobites, gastropods, Typical bivalve mold, Typical cast , Clear silicified wood, Fern Plant Fossil, Plant leaf impression.
Packing	box made of plastic or wood with Smooth and safe edges
Purity	All Samples Show Typical Features
size	Fossil body at least (5cm×5 cm)approx.
legend & user guide	ID numbers for each sample installed on the samples it selves. The user guide is installed on the box and indicate the number of the sample and its name in both Arabic and English

Item No: 4.13 Item Name: Field Magnifier

Component & Specification	
Jobs of tool	10X magnifier for field rock study.
Design of tool	Optics are securely mounted in nickel or stainless steel – plated case that slides into its own protective housing

Item No: 4.14 Item Name: Model of earth Internal structure

Component & Specification	
Model Features	Removable parts showing the crust, mantle, lithosphere, and asthenosphere, inner and outer core with Mohorovicic and Gutenberg discontinuities (the model should show name of all parts).
Dimension	Minimum Size about 40 cm diameter and 50 cm high.
Material	unbreakable plastic
Legend	identification list included both Arabic and English

Item No: 4.15 Item Name: Basic Celestial Globe Model

Component & Specification	
Model Features	Internal movable (10 cm) approx. diameter earth globe with metal axial rotation. Rotating (2.5cm) approx. diameter sun on the internal surface of the globe. Principle stars and constellation. Scansion, declination scales & ecliptic is printed in four colors on the inside of the globe.
Dimension	At least 40 cm diameter
Material	transparent plastic globe
user guide	Model labeled with Arabic and/or English. identification list and user guide included both Arabic and English

Item No: 4.16 Item Name: THE ORBITER

Component & Specification	
Model Features	Manually rotation instrument to study sun – earth – moon relationships
Dimensions	Approximate size: Suitable arm's length 50 cm at least. With clear color and physical features. The orbiter can show different phase of moon, day, night and twilight areas, seasonal changes and eclipses. Electric motor support light source and rotation.(sun will be the largest one with yellow color, then earth with blue color & finally moon with white color .
Material	unbreakable plastic
user guide	identification list included both Arabic and English

Item No: 4.17 Item Name: Oceanographic Model

Component & Specification	
Model Features	Model Showing in 3rd, the following features – pacific ocean floor Trenches – M.O.R. (Mid-Ocean Ridge), volcanic activity, seismic areas, An abyssal plain – continental shelf-continental rise – continental slope. continental land forms in relief
Dimensions	Min Dimensions: (75x50x10 cm)
Material	unbreakable plastic
Legend	identification list included both Arabic and English

Item No: 4.18 Item Name: Fault Fractures Model Set

Component & Specification	
Model Features	Geological demonstrations composed of six separated parts the (2) opposite inclined fault plane & three fractures. Mounted on suitable base. The model showing at least three colorfully painted layers with graven structures fined altogether. The set must show the three types of fault (normal, reverse & graven ones).
Dimensions	size 70 x 30 x 25 cm. approx.
Material	unbreakable plastic model or hard wood
Legend	identification list included both Arabic and English

Item No: 4.19 Item Name: Fold Model Set

Component & Specification	
Model Features	Perfect for demonstrating & development of fold anticline and synclinal folds. Surface features as well as subsurface structures are clearly noted on each, showing three layers colorfully painted. The model set composed of 4 - 8 – pieces. mounted on suitable base, with vinyl cover
Dimensions	Dimension for model each piece: 20x15x10 cm approx.
Material	Unbreakable plastic model or hard wood.
Legend	identification list included both Arabic and English

Item No: 4.20 Item Name: Plate tectonic models

Component & Specification	
Model Features	The realistically illustrated, Labeled model, showing: Sea floor spreading – convergent & divergent boundaries- Transform fault Volcanism – continental margins mounted on suitable base with vinyl cover (3-part model).
Dimensions	40x25 x15 cm approx.
Material	unbreakable plastic or hard wood
Legend	identification list included both Arabic and English key

Item No: 4.21 Item Name: geological map of Jordan

Component & Specification	
Map Subject	Major geological divisions of the Hashemite Kingdom of Jordan, according to the geological eras and ages.
Dimension	Min. subject area (100 cm x70 cm) approx.
Material	Made of hard paper or carton Coated with a transparent layer and a buffer with suitable case
Legend	Tags, parts and explanations that are installed on the map should be in Arabic.

Item No: 4.22 Item Name: Geologic time scale

Component & Specification	
Map / chart subject	Showing major eras, periods, epochs, and stages, according to scale. Learn the division of earth history, with major life forms each time, also the scale must show images for index fossils for each era.
Dimension	Min. subject area (100cmx70 cm) approx.
Material	Made of hard paper or carton Coated with a transparent layer and a buffer with suitable case
Legend	Tags, parts and explanations that are installed on the map should be in Arabic.

Item No: 4.23 Item Name: Satellite image of Jordan

Component & Specification	
Map / chart subject	Satellite image of Jordan for geological Survey purposes
Dimension	Min. subject area 100X70 cm
Material	Made of hard paper or carton Coated with a transparent layer and a buffer with suitable case.
Legend	Tags, parts and explanations that are installed on the as source language support with Arabic translation.

Item No: 4.24 Item Name: Stereoscope

Component & Specification	
Jobs of tool or device	The powerful lens magnifies and increases vertical exaggeration for more depth to enhance the standard 3-d effect (with aerial photographs: black & white at least two photographs).
Magnification	(2-2.5) x
Size	(7.5 x 12.5) cm
legend & user guide	instruction booklet, and identification list included Arabic and English .
Training Course	Person/ Device, a practical application to use the Device.

Item No: 4.25 Item Name: Crystal Models

Component & Specification	
Features	Set of six of most important model (Isometric form, Hexagonal, Rhombohedral, Tetragonal, Orthorhombic, Monoclinic, and Triclinic Systems). Forms of unbreakable strong transparent plastic material, fixed with bass mounting rod serves both as crystallographic axis and a shaft for rotating, each model on its labeled. White cord also serves as an axis and black lines on the outer model illustrate yet another form. With suitable plastic box to keep it safely.
Size of each model	(10 x 15) cm approximately.
legend & user guide	With identification list included a detailed user's guide in both Arabic and English.

Item No: 4.26 Item Name: Atmosphere Chart

Component & Specification	
Features	Global atmospheric influences, meteorological motion, clouds and precipitation, weather symbols, meteorological optics, pollution meteorology (Full color chart).
Packaging	Made of carton or plastic.
Size	(150 x 100) cm approximately.
Legend	With identification list included a detailed user's guide in both Arabic and English with suitable case.

Item No: 4.27 Item Name: Underground water Model

Component & Specification	
Model Features	Model to Simulated Surface and ground water movement, features and Phenomena. The Tank of is fitted with suitable Kinds of gravel & sand is arranged as a sequence of layers. Two plastic bottles with stoppers are standing at the upper two opposite edges of the tank. Funnel connected with a tank, two syringes for dye injection and well pumping, Dye soluble in water – one syringes (60-100) ml. (6-12) glass pipe with a diameter of (0.5-0.7) cm, in different length and opened in both sides.
Model Attachment	2 syringes (60-100) ml. 2 Funnel. 2 plastic bottles . Colored sand and clay material. Colored water and stains
Dimensions	Min size: (90x40x5 cm. (length height x width).
Material	Clear acrylic tank with stand, composed of a transparent unbreakable plastic material or acrylic colorless material dimensions of model.
legend & user guide	Detailed Arabic user guide
Training Course	Person/ Device; Removing and installing the Device, operating software, a practical application to use the Device.

Item No: 4.28 Item Name: Geological compass With belt case

Component & Specification	
Design of the tool	Clinometers compass with adjustment for magnetic declination by screwdriver , level bubbles , mirror
Graduation	1°, and printed all directions.
Body material	Metal resin

Item No: 4.29 Item Name: Tectonic Map

Component & Specification	
Map / chart subject	Main plates and geologic features at plate boundaries of the world.
Dimension	Min.(100cm×70 cm)
Material	Made of hard paper or carton Coated with a transparent layer and a buffer with suitable case
Legend	Tags, parts and explanations that are installed on the map should be in Arabic and English

C. Drawings

N/A

D. Inspections and tests

The following inspections and tests shall be performed:

UNOPS or its representative may inspect and/or test any or all item of the goods to confirm their conformity to the contract, prior to dispatch from the manufacturer's premises. Such inspection and clearance will not prejudice the right of the consignee to inspect and test the goods on receipt at destination.

If the goods fail to meet the laid down specifications, the supplier shall take immediate steps to remedy the deficiency or replace the defective goods to the satisfaction of the purchaser.

Any contract supplies may on or after delivery be inspected and may be rejected if found not to comply with the requirements of the contract. Such rejected supplies shall be held at the cost and risk of the supplier who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with supplies which do comply with the requirements of the contract within 3 working days. Failing such removal the rejected supplies shall be returned at the suppliers cost.

E. Manufacturer's authorization form

N/A

**Invitation To Bid (goods)
For The Provision And Installation Of Scientific Laboratory Equipment
And Material
ITB No. 15-IQOH-ITB-73**

Section 5: UNOPS General Conditions of Contract

In the event of an order, the following contract will apply:

- [UNOPS General Conditions of Contract for goods](#)

The conditions are available at: <http://www.unops.org/english/Opportunities/suppliers/how-we-procure/Pages/default.aspx>

**Invitation To Bid (goods)
For The Provision And Installation Of Scientific Laboratory Equipment
And Material
ITB No. 15-IQOH-ITB-73**

Section 6: UNOPS Special Conditions for Goods

The following Special Conditions for Goods (SCG) shall supplement and/or amend the General Conditions for Goods (GCG).

Whenever there is a conflict, the provisions in the GCG shall prevail.

**Invitation To Bid (goods)
For The Provision And Installation Of Scientific Laboratory Equipment
And Material
ITB No. 15-IQOH-ITB-73**

Section 7: UNOPS Contract/Purchase Order form

Attached

ANNEX A**Invitation To Bid (goods)****For The Provision And Installation Of Scientific Laboratory Equipment And Material****ITB No. 15-IQOH-ITB-73****Bid/No Bid confirmation form**

If after assessing this opportunity you have made the determination not to submit your bid, we would appreciate if you could return this form indicating your reasons for non-participation.

Date:

To: UNOPS
Hamzah KhairFax/email: hamzahk@unops.orgFrom: _____

Subject ITB- 15-IQOH-ITB-73

YES, we intend to submit an offer.

NO, we are unable to submit a bid in response to the above mentioned Invitation To Bid due to the reason(s) listed below:

- ☐ The requested products are not within our range of supply
- ☐ We are unable to submit a competitive offer for the requested products at the moment
- ☐ The requested products are not available at the moment
- ☐ We cannot meet the requested specifications
- ☐ We cannot offer the requested type of packing
- ☐ We can only offer FCA prices
- ☐ The information provided for quotation purposes is insufficient
- ☐ Your ITB is too complicated
- ☐ Insufficient time is allowed to prepare a bid
- ☐ We cannot meet the delivery requirements
- ☐ We cannot adhere to your terms and conditions (please specify: payment terms, request for performance security, etc.)
- ☐ We do not export
- ☐ Our production capacity is currently full
- ☐ We are closed during the holiday season
- ☐ We had to give priority to other clients' requests
- ☐ We do not sell directly but through distributors
- ☐ We have no after-sales service available
- ☐ The person handling the bids is away from the office
- ☐ Other (please provide reasons) _____
- ☐ We would like to receive future ITBs for this type of goods
- ☐ We don't want to receive ITBs for this type of goods

If UNOPS has questions to the Bidder concerning this NO BID, UNOPS should contact Mr./Ms. _____, phone/email _____, who will be able to assist.

ANNEX B

Invitation To Bid (goods) For The Provision And Installation Of Scientific Laboratory Equipment And Material

ITB No. 15-IQOH-ITB-73

Check list form

Bidders are requested to complete this form and return it as part of their bid submission.

Activity	Yes/No/NA	Page # in your bid	Remark
Have you duly completed all the bidding forms provided in the Instructions to Bidders?			
• Bid/no bid confirmation			
• Bid submission, technical and price schedule offer form			
• UNGM Vendor registration (desired, not required)			
• Performance security for successful bidder			
• Bid Validity 120 days			
Have you provided the required information for qualification purposes as contained in ITB document 4: UNOPS Technical specifications/ statement of works? Including:			
• Financial capability related documents			
• Experience and technical capacity related documents			
• Provide samples upon request			
• Bidder to provide catalogue includes the manufacture production items			

ANNEX C

Invitation To Bid (goods) For The Provision And Installation Of Scientific Laboratory Equipment And Material ITB No. 15-IQOH-ITB-73

Bid submission, technical and price schedule offer form Cover page

Bidders must complete this form and return it as part of their bid submission.

This cover page, the specification/statement of work form, and the price schedule, form are an integral part of the bid submission form. Bidders are expected to return signed as part of their bid. The Bidder shall fill in this form in accordance with the instructions indicated. No alterations to its format shall be permitted and no substitutions shall be accepted.

Date: (Insert date (as day, month and year) of bid submission)
ITB No.: 15-IQOH-ITB-73

To: (Insert complete name of procurement official)

We, the undersigned, declare that:

- a. We have examined and have no reservations to the bidding documents, including amendment No.: (Insert the number and issuing date of each amendment);
- b. We offer to supply in conformity with the bidding documents and in accordance with the delivery schedules specified in the Schedule of Requirements the following goods and related services (Insert a brief description of the goods and related services);
- c. The total price of our bid, excluding any discounts offered in item (d) below, is: (Insert the total bid price in words and figures, indicating the various amounts and the respective currencies);
- d. The discounts offered and the methodology for their application are:
Discounts: If our bid is accepted, the following discounts shall apply. (Specify in detail each discount offered and the specific item of the Schedule of Requirements to which it applies.)
Methodology of application of the discounts: The discounts shall be applied using the following method: (Specify in detail the method that shall be used to apply the discounts);
- e. Our bid shall be valid for the period of time specified in Instructions to Bidders Sub-Clause 12 Period of Validity of Bids, from the date fixed for the bid submission deadline as set out in the Invitation To Bid Section 1, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- f. If our bid is accepted, we commit to obtain a performance security in accordance with Instructions to Bidders Sub-Clause 11 Bid Security and Terms and Conditions of the Contract;
- g. We have no conflict of interest in any activity that would put it, if selected for this assignment, in a conflict of interest with UNOPS;
- h. Our firm confirms that the offeror and sub-contractors have not been associated, or had been involved in any way, directly or indirectly, with the preparation of the design, terms of references and/or other documents used as a part of this solicitation;
- i. We embrace the principles of the [United Nations Supplier Code of Conduct](#) and adhere to the principles of the [United Nations Global Compact](#);

- j. Our firm, its affiliates or subsidiaries—including any subcontractors or suppliers for any part of the contract—has not been declared ineligible by UNOPS, in accordance with Instructions to Bidders Sub-Clause 2, Eligibility;
- k. We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive;
- l. We have not offered and will not offer fees, gifts and/or favours of kind in exchange for this ITB and will not engage in any such activity during the performance of any contract awarded.

I, _____ (name of signing official), certify that I am
_____, (position) of _____ (legal name of company); that by
signing this ITB for and on behalf of _____ (legal name of company) I am certifying that
all information contained herein is accurate and truthful and that the signing of this bid is within the scope
of my powers.

(Signature) _____
(Name) _____
(Title)

(Date)

Provide the name and contact information for the primary contact from your company for this quotation:

Name: _____ Title: _____

Mailing address (street name/number/city/town/province/state): _____

Tel. no: _____ Fax no: _____

Email address: _____

Offer valid until: _____ (date) Must be at least 120 days

Currency of offer: (state currency) Payment terms 30 days accepted: ☐

Are you a UNOPS registered vendor? ☐ Yes ☐ No If yes, provide vendor number: _____

Bid submission, technical and price schedule offer form

This form must be completed and returned as part of their bid submission.

The Bidder assumes full responsibility for the timely delivery to the to the school locations in Jordan (Ramtha, Irbid, Mafraq, AlBalqa, Amman, Madaba, Karak, Ma'an). Bids delivered to any other office, location, or email address will not be considered.

Contractor agrees to supply all goods and/or perform all work as specified in this bid, and in accordance with the terms and conditions of this bid at the prices quoted on this form.

Bidders shall fill in the enclosed forms in accordance with the instructions indicated. The list of line items in column 1 of the **Price Schedules**, shall reflect the list of goods and related services specified by UNOPS in the technical specifications/statement of work.

Technical offer

Bidders are encouraged to include any additional information regarding the goods they offer in this section in form of free text.

List of subcontractors or suppliers

Bidder must identify the names of all subcontractors/suppliers who will be providing good/services under this contract and the type of work being subcontracted.

(A) Full legal name and address of subcontractors_____

(B) _____

(C) _____

Comparative data/compliance table

To establish compliance of their bid with the UNOPS technical specifications/statement of work, Bidders must complete the right column of the below table and the compliance confirmation statement:

Item No / Lot No 1: List of goods (Physics)

UNOPS minimum technical requirements	UNOPS quantity	Bidders to fill-in
Air track		
Ammeter (AC)		
Ball and ring		
bar magnet		
Bernoulli tube		
Boyle's law apparatus		
Bucket and cylinder		
Calorimeter		
Capacitance Substitution Board		
Circular Coil		
Clinical thermometer		
compound strip		
Conical Conductor		
Cubes for density investigation		
Demonstration Dynamo		
demonstration spring		
Digital Low voltage power supply		
digital multi meter		
Digital Stop Watch		
Discharger		
Displacement vessel		
Ebonite rod		
electric fan		
Electroscope		
Electroscope needle		
galvanometer		
Hook's law		
Hope's apparatus		
horse shoe magnet		
Inclined plane		
Inducting current coil		
Joule's calorimeter		
Large Compass		
latent heat of steam apparatus		
leads Set (banana)		
leads Set (crocodile)		
lens holder		
Leslie Cube		
Lever stick		
Light box and optical set		
Linear expansion apparatus		
loud speaker		
Mechanical Cart		
Meld's apparatus		
Meter		
Meter Bridge		
Micrometer		
Narrow prism		
Optical bench		
Optical lenses		
pair of Rods		

Parallel plate condenser		
Pascal's law set		
Perspex Blocks		
Photoelectric effect apparatus		
Plain mirror		
Proof plane		
Pulley system		
Resistance box		
Rheostat		
ripple tank		
Set of Demountable transformer		
set of prisms		
set of tuning fork		
set of tuning fork on resonance boxes		
Single pulley		
Small compass		
Solenoid coil		
Spherical conductor		
Spherical mirror		
Spring balance		
Standard resistance units		
Stroboscope		
Thermometer (alcohol C °)		
Thermometer (alcohol F°)		
Thermometer (Mercury C °)		
Thermopile		
ticker tape timer		
Triangular Stand		
Triple beam balance		
U-shape magnet		
VAN DE GRAFF GENERATOR		
Vernier calipers		
Voltmeter (DC)		
weights		
Young's Modulus Apparatus		

Item No / Lot No 2: List of goods (Chemistry)

UNOPS minimum technical requirements	UNOPS quantity	Bidders to fill-in
Acetic Acid		
Aluminum Metal		
Amber color glass Reagent Bottles 125ml		
Amber color glass Reagent Bottles 250ml		
Amber Dropping bottle		
Ammonium Chloride		
Ammonium dichromate		
Ammonium hydroxide		
Ammonium Nitrate		
Atomic set Model		
Barium Chloride Dihydrate		
Beaker 1000ml		
Beaker 100ml		
Beaker 10ml		
Beaker 250ml		
Beaker 25ml		
Beaker 500ml		
Beaker 50ml		

Beehive shelves		
Blue Litmus Papers		
Boiling flask (Round bottom) 500ml		
Bunsen burner		
Burette		
Calcium Chloride Anhydrous		
Calcium Hydrogen Carbonate		
Calcium Hydroxide		
Calcium Metal		
Calcium Oxide		
Clear Dropping bottle		
Clear glass Reagent Bottles 125ml		
Clear glass Reagent Bottles 250ml		
Clear Safety Goggles		
Cobalt (II) Chloride Hexahydrate		
Copper		
Copper (II) Nitrate Tri hydrate		
Copper (II) Sulphate Anhydrous		
Copper (II) Sulphate Pentahydrate		
Copper Oxide		
Cork Borers brass		
Crucible tongs		
Crucibles 50ml		
Desicator		
Disposable Gloves		
Disposable graduated pipettes		
Disposable Mask		
Distillation head		
Electronic Balance		
Erlenmeyer(Conical flask)100ml		
Erlenmeyer(Conical flask)250ml		
Erlenmeyer(Conical flask)500ml		
Erlenmeyer(Conical flask)50ml		
Evaporation basin 50ml		
Filter funnels		
Filter Paper		
Filtering flask 250ml		
Filtering flask 500ml		
Fire Blanket		
Flask Brush		
Fractional column		
Funnel stand		
Gas Jars		
Graduated Measuring Cylinders 100ml		
Graduated Measuring Cylinders 250ml		
Graduated Measuring Cylinders 50ml		
Graduated pipettes 10ml		
Graduated pipettes 25ml		
Hoffman voltmeter		
Hot plate with magnetic stirrer		
Hydrochloric Acid		

Iodine		
Iron (III) Chloride		
Iron (III) Nitrate Nano- hydrate		
Iron (III) Oxide		
Iron filling		
Iron Wire Gauge (Gause)		
Lead (II) Nitrate		
Leibig Condenser		
Magnesium Chloride		
Magnesium Oxide		
Magnesium Ribbon		
Magnesium Sulphate		
Magnesium Turnings		
Magnetic rotors		
Magnetic rotors rod		
Mohr Clip		
Mortar & Pestle		
Naphthalene		
Nitric Acid		
Pair of Carbon electrodes		
Periodic Table Chart		
pH and temperature meter		
Pipette Bulb 10ml		
Pipette Bulb 1ml		
Pipette Bulb 2ml		
Pipette Bulb 5ml		
Pipette Filler (Pi-Pump)		
Plates for Electrolysis		
Pneumatic Trough		
Pneumatic trough		
Potassium Aluminum Sulphate		
Potassium Bromide		
Potassium Carbonate Anhydrous		
Potassium chromate		
Potassium Dichromate		
Potassium Hydroxide		
Potassium Iodide		
Potassium Nitrate		
Potassium Permanganate		
Potassium Sulfate		
PVC tubes OD=9mm		
Receive adapter		
Red Litmus Papers		
Retort stand		
Rubber Gloves		
Rubber Tubes OD=12.5mm		
Rubber Tubes OD=6mm		
Safety Thistle funnel		
Salt bridge		
Separating funnel		
Silver Nitrate		

Sodium Acetate		
Sodium Carbonate		
Sodium carbonate monohydrate		
Sodium Hydrogen Carbonate		
Sodium Hydroxide		
Sodium Sulfate		
Spectrum Tube Stand With Power Supply		
Spectrum Tubes		
Stainless steel spatula		
Stirring Rod		
Stoppers		
Sulphur		
Sulphuric acid		
Test Tube Brush		
Test Tube Holder		
Test Tube Stand		
Test Tubes		
Triangle		
Triangular stand		
Tubing connector T shape		
Tubing connector Y shape		
Universal Indicator Paper		
Vertical Pipette stand		
Volumetric flask 100ml		
Volumetric flask 250ml		
Volumetric flask 500ml		
Volumetric flask 50ml		
Washing bottles 250ml		
Washing bottles 500ml		
Water Still		
Zinc Metal		
Zinc Nitrate Hexahydrate		
Zinc Oxide		

Item No / Lot No 3: List of goods (Biology)

UNOPS minimum technical requirements	UNOPS quantity	Bidders to fill-in
Aceto carmine.(100ml)		
Aceto Orcein, (100ml)		
Acetone, (99.8%). (500) ml (99.8%).		
Benedict's Solution. (1000) ml		
Binocular Compound Microscope		
Bromothymol Blue, (10) gm		
Canada Balsam)25(ml (D:0.99)		
Carious Tooth MODEL		
Centrifuge		
Crystal violet. (25 ml), (D: 0.808)		
D N A Model		
Digital Microscope		
Dissecting SET		
Dissecting DISH		
Eosin stain, bottle. (100) gm		
Fructose (100) gm		

Giemsa stain (10 ml)		
Glucose, powder. (500(gm		
Grams Iodine. (100ml)		
Human Brain Model		
Human Ear Model		
Human Eye Model		
Human Heart Model		
Human Kidney Model		
Human Skeleton Model		
Human Torso Model		
Incubator		
Indophenol (100) gm		
Insect net		
Iodine. (100 gm)		
Leaf , Transverse section Model		
Lugol's solution, (100) ml (D: 1.007)		
Methyl cellulose. (50 gm)		
Methyl Orange. (25) gm		
Methylen Blue stain, (Dry.)5(gm		
Microscope Slide BOX		
Microscope Slides		
Mono cotolydone Root MODEL		
Monocotyledon Stem Model		
Nutrient Agar Powder. (1000 gm)		
Pepsin. (5) gm		
Petri Dishes		
Phenolphthalein. 100 gm		
Prepared Slides For Microscope		
Prepared Slides For projector		
Ringer's solution.(1 liter)		
Safranine stain, bottle (100) gm		
Section of Dicotyledon Root Model		
Section of Dicotyledon Stem Model		
Slide cover (COVER GLASSES)		
Slide Projector		
Sphygmomanometer		
Stereo Microscope (binocular)		
Stethoscope		
Sucrose. (250)gm		
Wright's Blood stain, bottle .(50 gm)		

Item No / Lot No 4: List of goods (Geology)

UNOPS minimum technical requirements	UNOPS quantity	Bidders to fill-in
Basic rock collection		
A mineral set of Hardness		
A mineral set for color & Streak		
A mineral set for cleavage		
A mineral set for Specific Gravity and Luster		
A set Of Igneous rock texture		
Jordanian industry Rocks and ore minerals		
A set of Igneous Rock		
A Set of clastic Sedimentary Rocks		

A Set of Chemical Biochemical Sedimentary Rocks		
A Set of Metamorphic Rocks		
Fossil for Record life		
Field Magnifier		
Model of earth Internal structure		
Basic Celestial Globe Model		
THE ORBITER		
Oceanographic Model		
Fault Fractures Model Set		
Fold Model Set		
Plate tectonic model		
geological map of Jordan		
Geologic time scale		
Satellite image of Jordan		
Stereoscope		
Crystal Models		
Atmosphere Chart		
Underground water Model		
Geological compass With belt case		
Tectonic Map		

The offered products are in accordance with the required specifications and technical requirements:

YES NO

Any deviations must be listed below:

Bid prices

Bidders to submit their financial bid by completing the price schedules.

Bidders shall fill in these Price Schedule Forms in accordance with the instructions indicated. The list of line items in column 1 of the **Price Schedules**, shall coincide with the List of Goods and Related Services specified by UNOPS in the technical specifications/statement of work.

CONTRACTOR AGREES TO SUPPLY ALL GOODS AND/OR PERFORM ALL WORK AS SPECIFIED IN THIS BID AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS BID AT THE PRICES QUOTED ON THIS FORM.

Bidder's prices for goods (price to be entered by Bidder):						
Item/ lot	Description	Qty (a).	Currency: JOD			
			Unit FCA (b)	price	Unit price CPT (c)	Total FCA (a)x(b)
1.1	Air track	26				
1.2	Ammeter (AC)	92				
1.3	Ball and ring	39				
1.4	bar magnet	92				
1.5	Bernoulli tube	39				
1.6	Boyle's law apparatus	39				
1.7	Bucket and cylinder	65				
1.8	Calorimeter	119				
1.9	Capacitance Substitution Board	65				
1.10	Circular Coil	146				
1.11	Clinical thermometer	119				
1.12	compound strip	65				
1.13	Conical Conductor	146				
1.14	Cubes for density investigation	119				
1.15	Demonstration Dynamo	119				
1.16	demonstration spring	92				
1.17	Digital Low voltage power supply	79				
1.18	digital multi meter	53				
1.19	Digital Stop Watch	200				
1.20	Discharger	92				
1.21	Displacement vessel	146				
1.22	Ebonite rod	145				
1.23	electric fan	79				
1.24	Electroscope	92				
1.25	Electroscope needle	65				
1.26	galvanometer	92				
1.27	Hook's law	65				
1.28	Hope's apparatus	39				
1.29	horse shoe magnet	119				
1.30	Inclined plane	92				
1.31	Inducting current coil	52				
1.32	Joule's calorimeter	119				
1.33	Large Compass	66				
1.34	latent heat of steam apparatus	39				
1.35	leads Set (banana)	400				
1.36	leads Set (crocodile)	400				
1.37	lens holder	400				

1.38	Leslie Cube	119				
1.39	Lever stick	172				
1.40	Light box and optical set	65				
1.41	Linear expansion apparatus	65				
1.42	loud speaker	120				
1.43	Mechanical Cart	65				
1.44	Meld's apparatus	52				
1.45	Meter	280				
1.46	Meter Bridge	65				
1.47	Micrometer	119				
1.48	Narrow prism	65				
1.49	Optical bench	26				
1.50	Optical lenses	400				
1.51	pair of Rods	145				
1.52	Parallel plate condenser	65				
1.53	Pascal's law set	39				
1.54	Perspex Blocks	92				
1.55	Photoelectric effect apparatus	65				
1.56	Plain mirror	400				
1.57	Proof plane	91				
1.58	Pulley system	118				
1.59	Resistance box	65				
1.60	Rheostat	92				
1.61	ripple tank	26				
1.62	Set of Demountable transformer	65				
1.63	set of prisms	65				
1.64	set of tuning fork	94				
1.65	set of tuning fork on resonance boxes	94				
1.66	Single pulley	145				
1.67	Small compass	145				
1.68	Solenoid coil	119				
1.69	Spherical conductor	91				
1.70	Spherical mirror	200				
1.71	Spring balance	65				
1.72	Standard resistance units	118				
1.73	Stroboscope	39				
1.74	Thermometer (alcohol C °)	119				
1.75	Thermometer (alcohol F °)	119				
1.76	Thermometer (Mercury C °)	119				
1.77	Thermopile	65				
1.78	ticker tabe timer	52				
1.79	Triangular Stand	280				
1.80	Triple beam balance	52				
1.81	U-shape magnet	119				
1.82	VAN DE GRAFF GENERATOR	26				
1.83	Vernier calipers	119				
1.84	Voltmeter (DC)	92				
1.85	weights	120				
1.86	Young's Modulus Apparatus	39				

Bidder's prices for goods (price to be entered by Bidder):

Item/ lot	Description	Qty (a).	Currency: JOD			
			Unit price FCA (b)	Unit price CPT (c)	Total price FCA (a)x(b)	Total price CPT (a)x(c)
2.1	Acetic Acid	43				

2.2	Aluminum Metal	43				
2.3	Amber color glass Reagent Bottles 125ml	172				
2.4	Amber color glass Reagent Bottles 250ml	258				
2.5	Amber Dropping bottle	215				
2.6	Ammonium Chloride	43				
2.7	Ammonium dichromate	43				
2.8	Ammonium hydroxide	43				
2.9	Ammonium Nitrate	43				
2.10	Atomic set Model	172				
2.11	Barium Chloride Dihydrate	43				
2.12	Beaker 1000ml	172				
2.13	Beaker 100ml	430				
2.14	Beaker 10ml	172				
2.15	Beaker 250ml	258				
2.16	Beaker 25ml	258				
2.17	Beaker 500ml	258				
2.18	Beaker 50ml	258				
2.19	Beehive shelves	129				
2.20	Blue Litmus Papers	43				
2.21	Boiling flask (Round bottom) 500ml	86				
2.22	Bunsen burner	258				
2.23	Burette	172				
2.24	Calcium Chloride Anhydrous	43				
2.25	Calcium Hydrogen Carbonate	43				
2.26	Calcium Hydroxide	43				
2.27	Calcium Metal	43				
2.28	Calcium Oxide	43				
2.29	Clear Dropping bottle	215				
2.30	Clear glass Reagent Bottles 125ml	172				
2.31	Clear glass Reagent Bottles 250ml	258				
2.32	Clear Safety Goggles	215				
2.33	Cobalt (II) Chloride Hexahydrate	43				
2.34	Copper	43				
2.35	Copper (II) Nitrate Tri hydrate	43				
2.36	Copper (II) Sulphate Anhydrous	43				
2.37	Copper (II) Sulphate Pentahydrate	43				
2.38	Copper Oxide	43				
2.39	Cork Borers brass	129				
2.40	Crucible tongs	86				
2.41	Crucibles 50ml	258				
2.42	Desicator	43				
2.43	Disposable Gloves	86				
2.44	Disposable graduated pipettes	215				
2.45	Disposable Mask	129				
2.46	Distillation head	86				
2.47	Electronic Balance	43				
2.48	Erlenmeyer(Conical flask)100ml	258				
2.49	Erlenmeyer(Conical flask)250ml	258				
2.50	Erlenmeyer(Conical flask)500ml	172				
2.51	Erlenmeyer(Conical flask)50ml	172				
2.52	Evaporation basin 50ml	258				
2.53	Filter funnels	172				
2.54	Filter Paper	86				
2.55	Filtering flask 250ml	172				
2.56	Filtering flask 500ml	172				
2.57	Fire Blanket	86				
2.58	Flask Brush	172				

2.59	Fractional column	86				
2.60	Funnel stand	129				
2.61	Gas Jars	129				
2.62	Graduated Measuring Cylinders 100ml	215				
2.63	Graduated Measuring Cylinders 250ml	215				
2.64	Graduated Measuring Cylinders 50ml	215				
2.65	Graduated pipettes 10ml	129				
2.66	Graduated pipettes 25ml	129				
2.67	Hoffman voltmeter	43				
2.68	Hot plate with magnetic stirrer	86				
2.69	Hydrochloric Acid	43				
2.70	Iodine	43				
2.71	Iron (III) Chloride	43				
2.72	Iron (III) Nitrate Nano- hydrate	43				
2.73	Iron (III) Oxide	43				
2.74	Iron filling	43				
2.75	Iron Wire Gauge (Gause)	86				
2.76	Lead (II) Nitrate	43				
2.77	Leibig Condenser	86				
2.78	Magnesium Chloride	43				
2.79	Magnesium Oxide	43				
2.80	Magnesium Ribbon	43				
2.81	Magnesium Sulphate	43				
2.82	Magnesium Turnings	43				
2.83	Magnetic rotors	86				
2.84	Magnetic rotors rod	86				
2.85	Mohr Clip	258				
2.86	Mortar & Pestle	129				
2.87	Naphthalene	43				
2.88	Nitric Acid	43				
2.89	Pair of Carbon electrodes	258				
2.90	Periodic Table Chart	43				
2.91	pH and temperature meter	129				
2.92	Pipette Bulb 10ml	129				
2.93	Pipette Bulb 1ml	129				
2.94	Pipette Bulb 2ml	129				
2.95	Pipette Bulb 5ml	129				
2.96	Pipette Filler (Pi-Pump)	172				
2.97	Plates for Electrolysis	129				
2.98	Pneumatic Trough	172				
2.99	Pneumatic trough	86				
2.100	Potassium Aluminum Sulphate	43				
2.101	Potassium Bromide	43				
2.102	Potassium Carbonate Anhydrous	43				
2.103	Potassium chromate	43				
2.104	Potassium Dichromate	43				
2.105	Potassium Hydroxide	43				
2.106	Potassium Iodide	43				
2.107	Potassium Nitrate	43				
2.108	Potassium Permanganate	43				
2.109	Potassium Sulfate	43				
2.110	PVC tubes OD=9mm	86				
2.111	Receive adapter	86				
2.112	Red Litmus Papers	43				
2.113	Retort stand	258				
2.114	Rubber Gloves	129				
2.115	Rubber Tubes OD=12.5mm	86				

2.116	Rubber Tubes OD=6mm	86				
2.117	Safety Thistle funnel	86				
2.118	Salt bridge	129				
2.119	Separating funnel	86				
2.120	Silver Nitrate	43				
2.121	Sodium Acetate	43				
2.122	Sodium Carbonate	43				
2.123	Sodium carbonate monohydrate	43				
2.124	Sodium Hydrogen Carbonate	43				
2.125	Sodium Hydroxide	43				
2.126	Sodium Sulfate	43				
2.127	Spectrum Tube Stand With Power Supply	43				
2.128	Spectrum Tubes	43				
2.129	Stainless steel spatula	215				
2.130	Stirring Rod	86				
2.131	Stoppers	43				
2.132	Sulphur	43				
2.133	Sulphuric acid	43				
2.134	Test Tube Brush	172				
2.135	Test Tube Holder	258				
2.136	Test Tube Stand	258				
2.137	Test Tubes	86				
2.138	Triangle	86				
2.139	Triangular stand	258				
2.140	Tubing connector T shape	129				
2.141	Tubing connector Y shape	129				
2.142	Universal Indicator Paper	43				
2.143	Vertical Pipette stand	86				
2.144	Volumetric flask 100ml	258				
2.145	Volumetric flask 250ml	258				
2.146	Volumetric flask 500ml	172				
2.147	Volumetric flask 50ml	172				
2.148	Washing bottles 250ml	86				
2.149	Washing bottles 500ml	86				
2.150	Water Still	43				
2.151	Zinc Metal	43				
2.152	Zinc Nitrate Hexahydrate	43				
2.153	Zinc Oxide	43				

Bidder's prices for goods (price to be entered by Bidder):

Item/ lot	Description	Qty (a).	Currency: JOD			
			Unit FCA (b)	price Unit price CPT (c)	Total FCA (a)x(b)	Total price CPT (a)x(c)
3.1	Aceto carmine.(100ml)	13				
3.2	Aceto Orcein, (100ml)	13				
3.3	Acetone, (99.8%). (500) ml (99.8%).	13				
3.4	Benedict's Solution. (1000) ml	13				
3.5	Binocular Compound Microscope	160				
3.6	Bromothymol Blue, (10) gm	13				
3.7	Canada Balsam)25(ml (D:0.99)	13				
3.8	Carious Tooth MODEL	13				
3.9	Centrifuge	13				
3.10	Crystal violet. (25 ml), (D: 0.808)	13				
3.11	D N A Model	13				

3.12	Digital Microscope	13				
3.13	Dissecting SET	26				
3.14	Dissecting DISH	26				
3.15	Eosin stain, bottle. (100) gm	13				
3.16	Fructose (100) gm	13				
3.17	Giemsa stain (10 ml)	13				
3.18	Glucose, powder. (500(gm	13				
3.19	Grams Iodine. (100ml)	13				
3.20	Human Brain Model	13				
3.21	Human Ear Model	40				
3.22	Human Eye Model	13				
3.23	Human Heart Model	40				
3.24	Human Kidney Model	40				
3.25	Human Skeleton Model	13				
3.26	Human Torso Model	40				
3.27	Incubator	13				
3.28	Indophenol (100) gm	13				
3.29	Insect net	39				
3.30	Iodine. (100 gm)	13				
3.31	Leaf , Transverse section Model	40				
3.32	Lugol's solution, (100) ml (D: 1.007)	13				
3.33	Methyl cellulose. (50 gm)	40				
3.34	Methyl Orange. (25) gm	13				
3.35	Methylen Blue stain, (Dry.)5(gm	13				
3.36	Microscope Slide BOX	13				
3.37	Microscope Slides	26				
3.38	Mono cotolydone Root MODEL	40				
3.39	Monocotyledon Stem Model	40				
3.40	Nutrient Agar Powder. (1000 gm)	13				
3.41	Pepsin. (5) gm	13				
3.42	Petri Dishes	13				
3.43	Phenolphthalein. 100 gm	40				
3.44	Prepared Slides For Microscope	40				
3.45	Prepared Slides For projector	40				
3.46	Ringer's solution.(1 liter)	13				
3.47	Safranin stain, bottle (100) gm	13				
3.48	Section of Dicotyledon Root Model	40				
3.49	Section of Dicotyledon Stem Model	40				
3.50	Slide cover (COVER GLASSES)	52				
3.51	Slide Projector	40				
3.52	Sphygmomanometer	13				
3.53	Stereo Microscope (binocular)	120				
3.54	Stethoscope	13				
3.55	Sucrose. (250)gm	13				
3.56	Wright's Blood stain, bottle .(50 gm)	13				

Bidder's prices for goods (price to be entered by Bidder):

Item/ lot	Description	Qty (a).	Currency: JOD			
			Unit FCA (b)	price Unit price CPT (c)	Total FCA (a)x(b)	Total price CPT (a)x(c)
4.1	Basic rock collection	43				
4.2	A mineral set of Hardness	43				
4.3	A mineral set for color & Streak	43				
4.4	A mineral set for cleavage	43				

4.5	A mineral set for Specific Gravity and Luster	43				
4.6	A set Of Igneous rock texture	43				
4.7	Jordanian industry Rocks and ore minerals	43				
4.8	A set of Igneous Rock	43				
4.9	A Set of clastic Sedimentary Rocks	43				
4.10	A Set of Chemical Biochemical Sedimentary Rocks	43				
4.11	A Set of Metamorphic Rocks	43				
4.12	Fossil for Record life	43				
4.13	Field Magnifier	43				
4.14	Model of earth Internal structure	43				
4.15	Basic Celestial Globe Model	43				
4.16	THE ORBITER	43				
4.17	Oceanographic Model	43				
4.18	Fault Fractures Model Set	43				
4.19	Fold Model Set	43				
4.20	Plate tectonic model	43				
4.21	geological map of Jordan	43				
4.22	Geologic time scale	43				
4.23	Satellite image of Jordan	43				
4.24	Stereoscope	43				
4.25	Crystal Models	43				
4.26	Atmosphere Chart	43				
4.27	Underground water Model	43				
4.28	Geological compass With belt case	43				
4.29	Tectonic Map	43				

Bid summary

	Bidder's total prices (price entered by Bidder):	
Total firm FCA price		
Total firm DAP price		

BIDDER'S DELIVERY DATA

Delivery time (DAP from date of order)	
FCA point(s) of delivery for offered products:	

ANNEX D

Invitation To Bid (goods) For The Provision And Installation Of Scientific Laboratory Equipment And Material ITB No. 15-IQOH-ITB-73

UNGM vendor registration form

As part of the bid, it is desired that the Bidder goes to the United Nations Global Marketplace (UNGM) registration website: <https://www.ungm.org/Registration/RegisterSupplier.aspx> and fills out the registration. If the Bidder is already registered with UNGM, please provide your UNGM registration number (_____). Please ensure that your firm's information on UNGM is current.

The Bidder may still bid even if not registered with the UNGM. However, if the Bidder is selected for contract award, the Bidder must register on the UNGM prior to contract signature.

All suppliers are required to adhere to the principles of the [United Nations Supplier Code of Conduct](#). UNOPS also expects all its suppliers to adhere to the principles of the [United Nations Global Compact](#) and strongly encourages them to subscribe to it.

ANNEX E

Invitation To Bid (goods) For The Provision And Installation Of Scientific Laboratory Equipment And Material ITB No. 15-IQOH-ITB-73

Performance security form

Note to Bidders: the bank, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated.

Date: (Insert date (as day, month, and year) of Bid Submission)

ITB No. and title: ITB No. 15-IQOH-ITB-73 For The Provision And Installation Of Scientific Laboratory Equipment And Material

Bank's Branch or Office: (Insert complete name of Guarantor)

Beneficiary: (Insert legal name and address of UNOPS)

PERFORMANCE GUARANTEE No.: (Insert Performance Guarantee number)

We have been informed that [insert complete name of supplier] (hereinafter called "the supplier") has entered into Contract No. (Insert number) dated (Insert day and month), (Insert year) with you, for the supply of [description of goods and related services] (hereinafter called "the contract"). Furthermore, we understand that, according to the conditions of the contract, a performance guarantee is required.

At the request of the supplier, we hereby irrevocably undertake to pay you any sum(s) not exceeding [insert amount(s)¹ in figures and words] upon receipt by us of your first demand in writing declaring the supplier to be in default under the contract, without cavil or argument, or your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee shall expire no later than the [insert number] day of [insert month] [insert year],² and any demand for payment under it must be received by us at this office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 458, except that subparagraph (ii) of Sub-article 20(a) is hereby excluded.

(Signatures of authorized representatives of the bank and the Supplier)

¹ The bank shall insert the amount(s) specified in the SCG and denominated, as specified in the SCG, either in the currency(ies) of the contract or a freely convertible currency acceptable to UNOPS.

² Dates established in accordance with Clause 12 of the General Conditions of Contract ("GCG"). UNOPS should note that in the event of an extension of the time to perform the contract, UNOPS would need to request an extension of this Guarantee from the Bank. Such request must be in writing and must be made prior to the expiration date established in the Guarantee. In preparing this Guarantee, UNOPS might consider adding the following text to the Form, at the end of the penultimate paragraph: "We agree to a one-time extension of this guarantee for a period not to exceed [six months] [one year], in response to UNOPS's written request for such extension, such request to be presented to us before the expiry of the guarantee."

